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OM protein - protein search, using sw model										
Run on:	December 20, 2004, 08:54:47 ; Search time 67 Seconds									
	160.625 Million cell updates/sec									
Title:	US-10-722-733-1_COPY_7_36									
Perfect score:	155									
Sequence:	1 HAE GTFF SDVSSYLEGGQAK E FIA WL V KGR 30									
Scoring table:	BLOSUM62									
	GapOp 10.0 , GapExt 0.5									
Searched:	2002273 seqs, 358729299 residues									
Total number of hits satisfying chosen parameters:	2002273									
Minimum DB seq length:	0									
Maximum DB seq length:	2000000000									
Post-processing:	Minimum Match 0% Maximum Match 100% Listing first 45 summaries									
Database :	A_Geneseq_23sep04,*									
	1: geneseq1990:*,*									
	2: geneseq2003as:*									
	3: geneseq2003bs:*									
	4: geneseq2003as:*									
	5: geneseq2003bs:*									
	6: geneseq2004as:*									
	7: geneseq2004bs:*									
	8: geneseq2004as:*									
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.										
Result No.	Score	Query Match	Length	DB ID	Description					
1	155	100.0	30	2 AAR4535	Aar4535 Insulinot-	XX	XX	XX	XX	XX
2	155	100.0	30	2 AAR63247	Aar63247 Insulinot-	XX	XX	XX	XX	XX
3	155	100.0	30	2 AAR79809	Aar79809 Glucagon-	XX	XX	XX	XX	XX
4	155	100.0	30	2 AAR80448	Aar80448 Human glu-	XX	XX	XX	XX	XX
5	155	100.0	30	2 AAR69653	Aar69653 Amidated	XX	XX	XX	XX	XX
6	155	100.0	30	2 AAR98915	Aar98915 GLP-1(7-35)	XX	XX	XX	XX	XX
7	155	100.0	30	2 AAR98566	Aar98566 Target pe-	XX	XX	XX	XX	XX
8	155	100.0	30	2 AAW16383	AAW16383 Glucagon-	XX	XX	XX	XX	XX
9	155	100.0	30	2 AAW63182	AAW63182 GLP-1(7-33)	XX	XX	XX	XX	XX
10	155	100.0	30	2 AAW63208	AAW63208 Glucagon-	XX	XX	XX	XX	XX
11	155	100.0	30	2 AAW50905	AAW50905 Glucagon-	XX	XX	XX	XX	XX
12	155	100.0	30	2 AAY03719	Aay03719 Amino aci-	XX	XX	XX	XX	XX
13	155	100.0	30	2 AAY31503	Aay31503 Glucagon-	CC	CC	CC	CC	CC
14	155	100.0	30	2 AAY34198	Aay34198 GLP-1 mut-	CC	CC	CC	CC	CC
15	155	100.0	30	2 AAY39773	Aay39773 Glucagon-	CC	CC	CC	CC	CC
16	155	100.0	30	2 AAY27374	Aay27374 Glucagon-	CC	CC	CC	CC	CC
17	155	100.0	30	2 AAY42935	Aay42935 Glucagon-	CC	CC	CC	CC	CC
18	155	100.0	30	2 AAY22166	Aay22166 GLP-1(7-37)	XX	XX	XX	XX	XX
19	155	100.0	30	2 ADI24916	Adi24916 GLP-1 (7-	SQ	SQ	SQ	SQ	SQ
20	155	100.0	30	3 ABB21340	Abb21340 GLP-1 pep					
21	155	100.0	30	3 AAY78949	Aay78949 Glucagon-					
22	155	100.0	30	3 ABP07313	Abp07313 Modified					
23	155	100.0	30	3 ABP07394	Abp07394 Modified					
24	155	100.0	30	3 ABP07314	Abp07314 Modified					
25	155	100.0	30	3 AAY53280	Aay53280 Glucagon-					

ALIGNMENTS

26	155	100.0	30	3 AAB11283	Aab11283 GLP-1 pep
27	155	100.0	30	4 AAB21108	Aab21108 Human glu-
28	155	100.0	30	4 AAB56116	Aab56116 Glucagon-
29	155	100.0	30	4 AAB2336	Aab2336 Glucagon-
30	155	100.0	30	4 AAG63303	Aag63303 An inolu-
31	155	100.0	30	4 AAU07375	Aau07375 Mammal
32	155	100.0	30	4 AAB09260	Aab09260 Human
33	155	100.0	30	4 AAB81170	Aab81170 Pancreati
34	155	100.0	30	4 AAB83291	Aab83291 GLP-1 pep
35	155	100.0	30	4 AAG0461	Aag0461 GLP-1.7/7
36	155	100.0	30	4 AAB85922	Aab85922 Glucagon-
37	155	100.0	30	4 AAB60249	Aab60249 Glucagon-
38	155	100.0	30	4 AAB36429	Aab36429 Glucagon-
39	155	100.0	30	4 AAB6124	Aab6124 Human glu-
40	155	100.0	30	5 AAC02204	Aac02204 Glucagon-
41	155	100.0	30	5 ABR43001	Abr43001 Insulinot
42	155	100.0	30	5 AAE14422	Aae14422 Mammalian
43	155	100.0	30	5 ABB8097	Abb8097 Glucogen
44	155	100.0	30	5 ABG71254	Abg71254 Human glu-

The sequence is that of a derivative of insulinotropin which has insulinotropic activity and is useful for enhancing insulin action in a mammal, partic. for treating Type II diabetes. (Claimed). It is partic. suited for delivery to a mammal by ionophoresis. (Updated on 25-MAR-2003 Claim 3; Page 20; 32PP; English.

XX Sequence 30 AA;

Query Match Similarity 100.0%; Score 155; DB 2; Length 30; Best Local Similarity 100.0%; Pred. No. 2 3e-15; Matches 30; Conservative 0; MisMatches 0; Indels 0; Gaps 0;

QY 1 HAE GTFF SDVSSYLEGGQAK E FIA WL V KGR 30

DB 1 HAEGFTPSDVSSYLEGQAKEFIAWLVRGR 30
 XX
 RESULT 2
 AAR80548 standard; peptide; 30 AA.
 XX
 ID AAR63247 standard; peptide; 30 AA.
 XX
 AC AAR63247;
 XX
 DT 25 MAR 2003 (revised)
 DD 02-MAY-1995 (first entry)
 XX
 DR Insulinotropic (GLP-1(7-36)) for use in treating NIDDM.
 KW insulinotropic activity; GLP-1; glucagon-like protein 1; NIDDM;
 KW non-insulin dependent diabetes mellitus; insulinotropic; truncated.
 XX
 GS Synthetic.
 XX
 PN EP019322-A2.
 XX
 PD 12-OCT-1994.
 XX
 PF 10-FEB-1994; 94EP-00300981.
 XX
 PR 07-APR-1993; 93US-00044133.
 XX
 PA (Pfizer) PRIZER INC.
 PA (SICIO-) SCIOS INC.
 XX
 PI Danley DE, Gelfand RA, Geoghegan KF, Yesoob K, Lambert WJ;
 PI Hong Q;
 XX
 PR Treatment of non-insulin dependent diabetes mellitus - using a glucagon-
 PR like peptide 1 or deriv. with prolonged action for sustained glycaemic
 PR control.
 XX
 PS Claim 2; Page 46; 10PP; English.
 XX
 CC This peptide is GLP-1(7-36) [GLP = glucagon-like peptide], a truncated
 CC deriv. of GLP-1. GLP-1 and its deriv.s are useful in the treatment of Non
 CC Insulin Dependent Diabetes Mellitus (NIDDM). During processing in the
 CC pancreas and intestine, GLP-1 (AAR63245) is converted to a 31 amino acid
 CC peptide having amino acids 7-37 of GLP-1, alternatively referred to as
 CC insulinotropin. GLP-1(7-37) has insulinotropic activity, ie. It is able
 CC to stimulate, or cause to be stimulated, the synthesis of the hormone
 CC polypeptides, are necessary during the meal and beyond to achieve
 CC sustained glycemic control in patients with NIDDM. The invention provides
 CC a compn. that has prolonged action after each administration. (Updated
 CC on 25-Mar-2003 to correct PN field.) (Updated on 25-MAR-2003 to correct
 CC (PA field.)
 XX
 SQ Sequence 30 AA;
 Query Match 100.0%; Score 155; DB 2; Length 30;
 Best Local Similarity 100.0%; Score No. 2.3e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QV 1 HAEGFTPSDVSSYLEGQAKEFIAWLVRGR 30
 DB 1 HAEGFTPSDVSSYLEGQAKEFIAWLVRGR 30
 AC AAR80548;
 XX
 DT 28-FEB-1996 (first entry)
 XX
 DE Human glucagon like peptide (GLP-1).
 XX
 KW Exendin-4; diabetes mellitus; hyperglycaemia; insulinotropic peptide;
 KW glucagon like peptide; GLP-1.
 KW Homo sapiens.
 XX
 PN US5424286-A.
 XX
 PR 13-JUN-1995.
 XX
 PF 24-MAY-1993; 93US-00066480.
 XX
 PR 24-MAY-1993; 93US-00066480.
 XX
 PA (ENGLISH) ENG J.
 XX

PI Eng J;
 XX WPI; 1995-262627/34.
 DR
 PT Stimulating/inhibiting insulin release with exendin polypeptide(s) - for
 XX treating diabetes mellitus and preventing hyperglycaemia.
 PS Disclosure; Col 5-6; 17pp; English.
 XX
 CC AAR50458 is the human glucagon like peptide (GLP-1), to which the
 CC Heloderma horridum/suspectum exendin-3/4 peptides are analogous. The
 CC exendin peptides are insulinotropic, and can therefore be used in the
 CC treatment of diabetes mellitus (types I or II), and for the prevention of
 CC hyperglycaemia.
 XX SQ Sequence 30 AA;
 Query Match 100.0%; Score 155; DB 2; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.3e-15; Mismatches 0; Indels 0; Gaps 0
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0
 Qy 1 HAGTFTSDVSSYLEGGQAKEFLAWLVGR 30
 Db 1 HAGTFTSDVSSYLEGGQAKEFLAWLVGR 30

RESULT 5
 AAR69063
 ID AAR69053 standard; peptide; 30 AA.
 XX
 AC AAR69063;
 XX
 DT 25-MAR-2003 (revised)
 XX 23-AUG-1995 (first entry)
 DE Amidated Glucagon like peptide 1 (GLP1) (7-35)-NH2.
 XX
 KW Glucagon like Peptide; GLP; transpeptidation; endopeptidase; trypsin;
 XX thrombin; cleavage.
 XX OS Synthetic.
 XX
 Key location/Qualifiers
 FT Modified-site 30
 FT /label= Arg-NH2
 XX
 PN WO9503405-A2.
 XX
 PD 02-FEB-1995.
 XX
 PF 19-JUL-1994; 94WO-US008125.
 XX
 PR 20-JUL-1993; 93US-0009162.
 XX
 PA (BION-) BIORNEBRASKA INC.
 XX
 PI Wagner FW, Stout J, Henriksen D, Partridge B, Manning S;
 XX DR
 XX WPI; 1995-075233/10.
 XX
 PT Transpeptidation of recombinant polypeptides - using endopeptidase such
 XX as trypsin or thrombin to modify C-terminal residue.
 PS
 XX
 The naturally occurring sequence of Glucagon like Peptide 1 (GLP1) is
 CC AAR69072. It is a 36 AA peptide that has been recombinantly produced but
 CC without a mechanism for providing for the amidation of the C-terminal Arg
 residue. Amidated recombinant GLP1 (7-36)NH2 (AAR69063) was prep'd. from a
 multicyclic fusion protein contg. four copies of a modified truncated GLP1
 peptide having AA residues 7-34 of the native polypeptide and the
 terminal AA residues A-P-A at residues 35-37 (GLP1 (7-34)-A-P-A).
 (AAR69064). The recombinant GLP1 (7-34)-A-P-A can be transpeptidated to

CC yield the modified recombinant native GLP1 (7-36)-NH₂ (AAR69063) as
 CC follows. Trypsin was used to cleave the peptide at the Lys-Ala bond in
 CC the presence of either Gly-Arc-NH₂ or Gly-Arc-Gly addition units so that
 CC the cleavage of the Ala-Phe-Arg leaving unit is followed by the addition
 CC of Gly-Arg-NH₂ or Gly-Arg-Gly to the core GLP1 (7-34) to yield either
 CC amidated 7-36 GLP1-NH₂ or GLP1 (7-36 with a terminal Gly (AAR69065).
 CC (Updated on 25-MAR-2003 to correct PN field.)
 XX SQ Sequence 30 AA;

Query Match	100.0%	Score	155	DB	2	length	30
Best Local Similarity	100.0%	Pred.	No.	2.3e-15			
Matches	30	Conservative	0	Mismatches	0	Indels	0
Oy	1	HAEHTFSDVSYLGEQAAKERRIAWMVKG	30				
Db	1	HAEHTFSDVSYLGEQAAKERRIAWMVKG	30				

RESULT 6

AAR98975	100.0%	Score	155	DB	2	length	30
ID	AAR98975	standard; peptide	30 AA.				
XX							
AC	AAR98975;						
XX							
DT	03-DEC-1996	(first entry)					
XX							
DR	GLP1 (7-35) -NH ₂ .						
XX							
KW	GLP1; C-amide; C-amidated peptide; alpha-carboxamide;						
KW	recombinant protein; fusion protein; transpeptidation;						
OS	Synthetic.						
XX							
FH	Key	Location/Qualifiers					
FT	FT Modified-site	30					
XX	/note= "C-terminal amide"						
XX	W09617941-A2.						
XX							
PD	13-JUN-1996.						
XX							
PF	07-DEC-1995;	95WO-US017799.					
XX							
PR	07-DEC-1994;	94US-00350528.					
XX							
PA	(BION-) BIONEBRASKA INC.						
XX							
PI	Stout JS, Partridge BE, Heriksen DB, Holmquist B, Wagner FW;						
XX							
DR	WPI; 1996-287185/29.						
XX							
PT	production of C-terminal alpha-carboxamidated peptide(s) - by cleavage						
PT	and transpeptidation of recombinant multicopy peptide(s) or fusion						
PT	constructs.						
XX							
PS	Example 16; Page 69; 93pp; English.						
XX							
CC	Amidated recombinant GLP1 (7-36)-NH ₂ (AAR69065) may be prep'd. from a						
CC	recombinant multicopy fusion peptide by cleavage, transamidation and						
CC	photochemical rearrangement. A DNA construct is formed by joining 4						
CC	copies of the coding sequence for GLP1 (7-36) Met (AAR69066) and a linker						
CC	peptide including a thrombin cleavage site. Expression in E. coli, 'coli',						
CC	which is subjected to transamidation and UV irradiation to yield GLP1 (7-						
CC	36)-NH ₂ . The amidated peptide may also be produced via GLP1 (7-35)-Met						
CC	(AAR69067) using a transpeptidation reaction						
XX							
SQ	Sequence 30 AA;						

Query Match 100.0%; Score 155; DB 2; length 30;
 Best Local Similarity 100.0%; Pred. No. 2.3e-15; Mismatches 0; Indels 0; Gaps 0;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY
ID AAR98956 standard; peptide; 30 AA.
XX
AC AAR98956;
XX
DE 15-JAN-1997 (first entry)
XX Target peptide (GLP1(7-36)) used in fusion protein construct.
XX
KW Fusion protein construct; isolation; purification;
KW Growth hormone releasing factor; glucagon-like peptide 1;
KW Parathyroid hormone; inclusion body; carbonic anhydrase.
XX
OS Synthetic.
XX
PN 609617342-A1.
XX
DD 13-JUN-1996.
PP 07-DEC-1995; 95WO-US015800.
XX
DR 07-DEC-1994; 94US-00350530.
PA (BETON-) BIONEBRASKA INC.
PC Paapridge BE, Stout JS, Henriksen DB, Manning SD, De La Motte RS;
PL Holmquist B, Wagner FW;
XX WPI; 1996-287186/29.
XX Isolation and purification of peptide(s) from fusion protein constructs -
PR which include a carbonic anhydrase and a variable fused polypeptide.
XX
PR Claim 58; Page 50; 67PP; English.
XX
CC A new method for the isolation and/or purification of a recombinant
CC peptide employs a fusion protein construct (FPC) comprising a carbonic
anhydrase and a variable fused polypeptide containing a target peptide.
CC The method comprises precipitating either the FPC or a fragment of the
CC FPC including the carbonic anhydrase. An alternative method of producing
the peptide comprises expressing the FPC as part of an inclusion body.
CC The target peptides of the FPC are derived from growth hormone releasing
CC factor (GRF), glucagon-like peptide 1 (GLP1) or parathyroid hormone
(PTH). This sequence corresponds to amino acids 7-36 of GLP1
XX
SQ Sequence 30 AA;
SO Sequence 30 AA;
QRY March 100.0%; Score 155; DB 2; Length 30;
DB Best Local Similarity 100.0%; Pred. No. 2; 3e-15;
DB Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
DB
QY 1 HAEGLFTSDVSSYLEGQAAKEFLAWLVKGR 30
DB 1 HAEGLFTSDVSSYLEGQAAKEFLAWLVKGR 30
RESULT 9
ID AAW63182
XX
AC AAW63182;
XX
DE 16-SEP-1998 (first entry)
XX GLP-1(7-36).
XX Glucagon-like peptide-1; GLP-1; diabetes; lipophilic; tetradecanoyl;
KW carboxynonadecanoyl; deoxycholoyl; choloyl; lithocholoyl.
XX
OS Homo sapiens.
XX
KEY Location/Qualifiers
FT Modified-site 30 /note= "optionally the C-terminal is in amide form"
FT
XX
PN WO9808871-A1.
XX
PR 05-MAR-1998.
XX
PP 22-AUG-1997; 97WO-DK000340.

XX
PR 30-AUG-1996; 96DK-00000931.
PR 08-NOV-1996; 96DK-00001259.
PR 20-DEC-1996; 96DK-00001470.

XX
PA (NOVO) NOVO-NORDISK AS.

XX
PI Knudsen LB, Sorensen PO, Nielsen PF;
DR WPI; 1998-239721/21.

XX
PT Glucagon-like peptide-1 derivatives which have lipophilic substituent -

PT exhibit protracted profiles of action relative to known glucagon-like peptide(s)-1 compounds and are useful in treatment of diabetes.

XX
PS Claim 36; Page: 75pp; English.

New derivatives of glucagon-like peptide-1 (GLP-1) and its fragments and their analogues are disclosed in which at least one amino acid residue of the parent peptide has a lipophilic substituent attached to it. The GLP-1 fragment is preferably GLP-1(4-C) where A is 1-7, and C is 15-45. The lipophilic substituent is typically tetradecanoyl, carboxymonadecanoyl, deoxycholoyl, choloyl or lithocholoyl, and it is attached e.g. to the epsilon-amino group of a lys residue in the peptide. The present sequence represents a preferred parent GLP-1 fragment to which the lipophilic substituent is to be attached. GLP-1 and its analogues and fragments may exhibit a high clearance rate from the body, which limits their usefulness. The new lipophilically substituted compounds have a protracted profile of action compared with known analogues, e.g. GLP-1(7-37). (N.B. The present sequence is described by name in the specification but is not explicitly shown. It is deduced from the protein sequence shown in Swiss-Prot entry P0125 using information given in the patent.)

CC Sequence 30 AA;

Query Match 100.0%; Score 155; DB 2; Length 30;
Best Local Similarity 100.0%; Prod. No. 2.3e-15; Mismatches 0; Indels 0; Gaps 0;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGLPTSDVSYLEGQAAKEFIAMLVKGR 30

Db 1 HAEGLPTSDVSYLEGQAAKEFIAMLVKGR 30

PA (ELLI) LILLY & CO ELI.
XX
PT Dimarchi RD, Efendic S;
XX
DR WPI; 1998-286595/25.

XX
PT Use of glucagon-like peptide-1 and analogues and derivatives - to reduce body weight, e.g., in treatment of obesity.

XX
PS Claim 12; Page 18; 42pp; English.

The patent describes a new method of reducing body weight which comprises administration of a composition comprising: (i) glucagon-like peptide-1 (GLP-1); (ii) a GLP-1 analogue; (iii) a GLP-1 derivative; (iv) an agonist of the GLP-1 receptor; (v) an agonist of the GLP-1 signal transduction cascade; (vi) a compound which stimulates synthesis of endogenous GLP-1; (vii) a compound that stimulates release of endogenous GLP-1; or (viii) a salt of a material described in (i)-(vii). The method may be used for treatment of obesity. The present sequence, GLP-1(7-36) amide, represents a preferred GLP-1 compound which can be used in the method.

XX
SQ Sequence 30 AA;

Query Match 100.0%; Score 155; DB 2; Length 30;
Best Local Similarity 100.0%; Prod. No. 2.3e-15; Mismatches 0; Indels 0; Gaps 0;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGLPTSDVSYLEGQAAKEFIAMLVKGR 30

Db 1 HAEGLPTSDVSYLEGQAAKEFIAMLVKGR 30

RESULT 11

AAW50906
ID AAW50906 standard; peptide; 30 AA.

XX
AC AAW50906;

XX DT 17-AUG-1998 (first entry)

DE Glucagon-like peptide-1 analogue SEQ ID NO:5.

XX Glucagon-like peptide-1; GLP-1 (7-37); GLP-1 analogue; surgical trauma; KW stress; hormonal response; insulin resistance; catabolic reaction; human; KW incretin hormone.

XX OS Synthetic.

OS Homo sapiens.

XX FR Key Modified-Site 30 Location/Qualifiers
PT /note= "amidated"

XX PT Modified-Site 30 Location/Qualifiers
PT /note= "amidated"

XX PN W09808873-A1.

XX PD 05-MAR-1998.

XX PP 26-AUG-1997; 97MO-US015042.

XX PR 30-AUG-1996; 96US-00349822.

XX PR 21-AUG-1997; 97US-00916991.

XX PA (ELLI) LILLY & CO ELI.

XX PI Efendic S;

XX DR WPI; 1998-239722/21.

XX PT Use of glucagon-like peptide-1 and analogues and their derivatives - to attenuate post-surgical catabolic changes, insulin resistance and hormonal responses to stress.

XX PT hormonal responses to stress.

XX PS >Claim 1; Page 13; 42pp; English.

The present sequence represents a glucagon-like peptide-1 (GLP-1) analogue, which is used in the methods of the invention. The methods are: (1) for attenuating post-surgical catabolic changes and insulin resistance, comprising administering glucagon-like peptide-1 (GLP-1), a GLP-1 analogue, a GLP-1 derivative or a salt of this compound, (2) for attenuating post-surgical catabolic changes and hormonal responses to stress, comprising administering a compound which exerts insulinotropic activity by interacting with the same receptor (or receptors) with which GLP-1, GLP-1 analogues and GLP-1 derivatives interact in exerting their insulinotropic activity, and (3) for attenuating post-surgical catabolic changes and hormonal responses to stress, comprising administering a compound which enhances insulin sensitivity by interacting with the same receptor (or receptors) with which GLP-1, GLP-1 analogues and GLP-1 derivatives interact to enhance insulin sensitivity. The processes are useful for improving recovery after surgery by preventing the catabolic reaction and insulin resistance caused by surgical trauma and exacerbated by pre-operative fasting. GLP-1's short half-life, and hence the need for continuous administration, are not disadvantages, as the patient is administered parenterally, before, during and after surgery.

Sequence 30 AA;

Query Match 100.0%; Score 155; DB 2; Length 30;
Best Local Similarity 100.0%; Pred. No. 2.3e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HAE GTF PIS DVA SYLE GQA KEF IAW LVK GR 30
Db 1 HAE GTF PIS DVA SYLE GQA KEF IAW LVK GR 30

RESULT 12

AY03719

ID AAY03719 standard; peptide; 30 AA.

AC AAY03719;

XX DR 08-JUN-1999 (first entry)

DB Amino acid sequence of GLP-1.

XX KW Exendin; agonist; diabetes; disorder; plasma glucose; gastric;

XX KW diagnostic; gastro-intestinal; radiological; generic; GLP-1.

OS Synthetic.

PH Key Location/Qualifiers

PT Modified-site 30 /note= "C-terminal amide"

XX PN WO9907404-A1.

PD 18-FEB-1999.

XX DE 06-AUG-1998; 98WO-US016387.

PR 08-AUG-1997; 97US-0055404P.

XX (AMYL-) AMYLIN PHARM INC.

PI Beeley NRA, Prickett KS;

XX DR WPI; 1999-180403/15.

XX PT New exendin agonists - useful in the treatment of Type I and II diabetes.

XX PS Disclosure; Fig 4; 70pp; English.

XX CC The invention relates to exendin agonists which slow gastric emptying and

CC lower plasma glucose levels. The peptides are of the formula Xaa₁-Xaa₂-

CC Xaa₃-Gly-Thr-Xaa₄-Xaa₅-Xaa₆-Xaa₇-Xaa₈-Ser-Lys-Gln-Xaa₉-Glu-Glu-Glu-Ala-

Sequence 30 AA;

Query Match 100.0%; Score 155; DB 2; Length 30;
Best Local Similarity 100.0%; Pred. No. 2.3e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HAE GTF PIS DVA SYLE GQA KEF IAW LVK GR 30
Db 1 HAE GTF PIS DVA SYLE GQA KEF IAW LVK GR 30

RESULT 13

AY31503

ID AAY31503 standard; peptide; 30 AA.

AC AAY31503;

XX DT 08-NOV-1999 (first entry)

DB Glucagon-like peptide (GLP-1) sequence.

XX KW Exendin; agonist; GLP-1; glucagon-like peptide; toxic hypervolemia;

XX KW diuretics; renal plasma flow; glomerular filtration rate; pre-eclampsia;

XX KW eclampsia of pregnancy; cardiac contractility; renal failure; diuretic;

XX KW congestive heart failure; nephrotic syndrome; pulmonary edema; cirrhosis;

XX KW hypertension; urine flow.

OS Synthetic.

PH Key Location/Qualifiers

PT Modified-site 30 /note= "C-terminal amide"

XX PN WO9907408-A1.

PD 19-AUG-1999.

XX DE 19-AUG-1999.

PR 05-FEB-1999; 99WO-US002554.

XX (AMYL-) AMYLIN PHARM INC.

PI Young AA, Vine W, Beeley NRA, Prickett K;

XX DR WPI; 1999-527332/44.

XX PS Disclosure; Page 7; 94pp; English.

XX CC Increasing urine flow by administering peptides or peptide agonists.

XX PS Disclosure; Page 7; 94pp; English.

CC The invention relates to new methods of increasing urine flow that
 CC comprises administering an exendin or exendin agonist, or a GIP-1
 CC (glucagon-like peptide) or GLP-1 agonist. The new methods using an
 CC exendin, exendin agonist, GLP-1 or GLP-1 agonist are useful for
 CC increasing urine flow, decreasing potassium concentration in urine,
 CC preventing or alleviating a disorder associated with toxic hypervolemia
 CC (renal failure, congestive heart failure, nephrotic syndrome, pulmonary
 CC edema, cirrhosis, or hypertension). They can also be used for inducing
 CC rapid diuresis, preparing an individual for surgical procedure,
 CC increasing renal plasma flow and glomerular filtration rate, treating pre-
 CC eclampsia or eclampsia of pregnancy, and increasing a condition/
 CC disorder that can be alleviated by increasing cardiac contractility
 CC (congestive heart failure, pulmonary edema, systemic edema or renal
 CC failure). Unlike prior art diuretics, the new methods increase urine
 CC excretion and sodium excretion without increasing potassium loss, and are
 CC fast acting. They have a prolonged duration of action, are inotropic,
 CC have a low toxicity, and are easily administered intravenously. The
 CC present sequence represents a GLP-1 peptide which can be used in the
 CC methods of the invention

SQ Sequence 30 AA;

Query Match 100.0%; Score: 155; DB 2; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.3e-15; Mismatches 0; Indels 0; Gaps 0;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAE~~G~~FITSDVSSVLEGQAAKEFI~~A~~WLVKGR 30
 Db 1 HAEGFTFSDVSSVLEGQAAKEFI~~A~~WLVKGR 30

RESULT 14

AAY34198
 ID AAY34198 standard; peptide; 30 AA.

XX AAY34198;
 AC
 XX

DT 16-NOV-1999 (first entry)

DE GLP-1 mutant peptide, GLP-1(7-36).

XX Glucagon-like peptide-1; human; type I diabetes; type II diabetes;

KW obesity; therapy; mutein.

XX Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers

FH Misc-difference 30 /note= "optionally amidated"

FT WO9943341-A1.

XX 02-SEP-1999.

PF 25-FEB-1999; 99WO-DK000084.

PR 27-FEB-1998; 98DK-00000268.

PR 27-FEB-1998; 98DK-00000272.

PA (NOVO) NOVO-NORDISK AS.

XX Knudsen LB, Husefeld PO, Nielsen PF, Kaarsholm NC, Olsen HB;
 PI Bjorn SE;
 XX DR WPI; 1999-540500/45.
 PT Composition containing stabilized derivatives of glucagon-like peptide-1
 PT with high alpha-helix content, for treating diabetes and obesity.

PS Claim 30; Page: 63pp; English.

XX This sequence represents a mutant of the human glucagon-like peptide-1

CC (GLP-1), and has a helix content (determined by circular dichroism at 222
 CC nm in water at 20-24 degrees C) over 25-50% at peptide
 CC concentration about 10 microm. The GLP-1 mutant can be used in a
 CC pharmaceutical composition of the invention. The compositions are used to
 CC treat diabetes (both type I and particularly type II) and/or obesity.
 CC They have better solubility and/or stability (against endogenous
 CC diaminopeptidyl peptidase) than parent peptides, with long persistence in
 CC the plasma and retention of biological activity. They form partially
 CC structured micelle-like aggregates in solution, with the helix content
 CC practically independent of concentration. NOTE: This sequence was created
 CC from the human GLP-1 sequence using information given in the
 CC specification

SQ Sequence 30 AA;

Query Match 100.0%; Score: 155; DB 2; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.3e-15; Mismatches 0; Indels 0; Gaps 0;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAE~~G~~FITSDVSSVLEGQAAKEFI~~A~~WLVKGR 30
 Db 1 HAEGFTFSDVSSVLEGQAAKEFI~~A~~WLVKGR 30

RESULT 15

RAY3973
 ID RAY3973 standard; peptide; 30 AA.

XX AAY3973;

DT 26-NOV-1999 (first entry)

XX Glucagon like peptide-1 (7-36).

DE Glucagon-like peptide-1; GLP-1; appetite suppression; human; diabetes;

KW spontaneous food intake; therapy.

XX Homo sapiens.

OS Key Location/Qualifiers

FH Misc-difference 29 /note= "amidated"

XX WO9947161-A1.

PN 23-SEP-1999.

XX PF 16-MAR-1999; 99WO-US005571.

XX PR 19-MAR-1998; 98US-0078544P.

XX PA (BION-) BIONEBRASKA INC.

XX PI Goke B, Beglinger C, Coolidge TR;

XX DR WPI; 1999-561859/47.

XX New composition for controlling food intake especially in diabetes
 PT sufferers.

XX PS Claim 5; Page 22; 35pp; English.

XX This sequence represents a glucagon-like peptide-1 sequence used in the
 CC composition of the invention. The composition is for appetite
 CC suppression, and comprises a compound binding to a GLP-1 receptor and a
 CC pharmaceutical carrier. The composition can be administered to control
 CC appetite and/or reduce spontaneous food intake in humans, especially in
 CC humans with diabetes

SQ Sequence 30 AA;

Query Match 100.0%; Score: 155; DB 2; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.3e-15;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY
1 HAEGRFTSDVSSYLRGQAKFPAFLWLVRGR 30
1 HAEGRFTSDVSSYLRGQAKFPAFLWLVRGR 30

Search completed: December 20, 2004, 09:01:01
Search time : 71 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: December 20, 2004, 08:54:47 ; Search time 48 Seconds

41.449 Million cell updates/sec

Title: score: US-10-722-733-1_COPY_7_36

Sequence: 1 HAEGRFTSDVSSYLEGQQAKFIAWLVKRG 30

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 478139 seqs, 6618000 residues

Total number of hits satisfying chosen parameters: 478139

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 10%

Listing first 45 summaries

Database : Issued_Patents_AA:*

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2: /ccn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /ccn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /ccn2_6/ptodata/1/iaa/6B_COMB.pep:*
5: /ccn2_6/ptodata/1/iaa/PCITUS_COMB.pep:*
6: /ccn2_6/ptodata/1/iaa/backfile1.pep:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

% SUMMARIES

No.	Score	Query Match	Length	DB ID	Description
1	155	100.0	30	1	US-08-0564-480-6
2	155	100.0	30	1	US-08-095-162-1
3	155	100.0	30	1	US-08-470-220A-1
4	155	100.0	30	2	US-08-927-227-1
5	155	100.0	30	3	US-08-967-374-1
6	155	100.0	30	3	US-08-348-136-1
7	155	100.0	30	3	US-08-961-405A-5
8	155	100.0	30	3	US-08-915-918A-5
9	155	100.0	30	3	US-09-302-596-4
10	155	100.0	30	3	US-08-472-349-3
11	155	100.0	30	3	US-09-333-415-4
12	155	100.0	30	3	US-09-212-663-4
13	155	100.0	30	3	US-09-209-799D-10
14	155	100.0	30	3	US-09-975-905-1
15	155	100.0	30	4	US-09-505-991-1
16	155	100.0	30	4	US-09-573-809-1
17	155	100.0	30	4	US-09-303-016-4
18	155	100.0	30	4	US-09-181A-4
19	155	100.0	30	4	US-09-614-847-114
20	155	100.0	30	4	US-09-997-792A-8
21	155	100.0	30	4	US-09-805-577-4
22	155	100.0	30	4	US-09-585-186A-5
23	155	100.0	30	4	US-09-830-323-1
24	155	100.0	30	4	US-09-622-105-3
25	155	100.0	30	4	US-10-125-215-1
26	155	100.0	30	4	US-09-859-894-4
27	155	100.0	30	4	US-09-656-121-11

RESULT 1
 US-08-066-480-6
 Sequence 6, Application US/08066480
 ;
 General Information:
 ; Parent No. 5424286
 ;
 ; APPLICANT: Eng, John
 ; TITLE OF INVENTION: Pharmaceutical Compositions And Use of
 ; NUMBER OF SEQUENCES: 7
 ; CORRESPONDENCE ADDRESS:
 ; ADDRESSEE: Allegretti & Witcoff, Ltd.
 ; STREET: 10 S. Wacker Drive
 ; CITY: Chicago
 ; STATE: Illinois
 ; COUNTRY: USA
 ; ZIP: 60606
 ; COMPUTER READABLE FORM:
 ; MEDIUM TYPE: Floppy disk
 ; COMPUTER: IBM PC compatible
 ; OPERATING SYSTEM: PC-DOS/MS-DOS
 ; SOFTWARE: PatentIn Release #1.0, Version #1.25
 ;
 CURRENT APPLICATION DATA:
 ; APPLICATION NUMBER: US/08/066, 480
 ; FILING DATE: 24-MAR-1993
 ; CLASSIFICATION: 514
 ; ATTORNEY/AGENT INFORMATION:
 ; NAME: McDonnell, John J
 ; REFERENCE NUMBER: 25, 949
 ; REGISTRATION NUMBER: 93, 084
 ; REFERENCE DOCKET NUMBER: 93, 084
 ; TELECOMMUNICATION INFORMATION:
 ; TELEPHONE: 312-715-1000
 ; TELEFAX: 312-715-1234
 ; INFORMATION FOR SEQ ID NO: 6:
 ;
 ; SEQUENCE CHARACTERISTICS:
 ; LENGTH: 30 amino acids
 ; TYPE: amino acid
 ; STRANDEDNESS: single
 ; TOPOLOGY: linear
 ; MOLECULE TYPE: peptide
 ;
 ; FEATURES:
 ; NAME/KEY: Peptide
 ; LOCATION: 1..30
 ; OTHER INFORMATION: /label= GLP-1(7-36) fragment"
 ; OTHER INFORMATION: /note= "GLP-1(7-36)"

US-08-066-480-6

Query Match Score 100.0%; Score 155; DB 1; Length 30;
 Best Local Similarity 100.0%; Pred. No. 8; 6e-16;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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US 08-095-162-1
Sequence 1, Application US/08095162
Patient No. 5512459
GENERAL INFORMATION:
APPLICANT: Wagner, Fred W.
APPLICANT: Manning, Shane
TITLE OF INVENTION: Enzymatic Method for Modification of
TITLE OF INVENTION: Recombinant PolyPeptides
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: Merchant & Gould
PARRIDGE, Bruce
APPLICANT: Manning, Shane
CITY: Minneapolis
STATE: MN
COUNTRY: USA
ZIP: 55402
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MC-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/095,162
FILING DATE: 20-JUL-1993
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Nelson, Albin J.
REGISTRATION NUMBER: 28,659
REFERENCE/DOCKET NUMBER: 8648.32-US01
TELECOMMUNICATION INFORMATION:
TELEPHONE: 612-332-5300
TELEFAX: 612-332-9081
INFORMATION FOR SBO ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 30 amino acids
TYPE: amino acid
TOPOLOGY: linear
IMMEDIATE SOURCE:
MOLECULE TYPE: peptide
CLONE: GLP1 7-36-NH2 (Glucagon-like Peptide)
US-08-470-220A-1
Query Match 100.0%; Score 155; DB 1; Length 30;
Best Local Similarity 100.0%; Pred. No. 8.6e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 HAE~~G~~F~~T~~D~~V~~S~~S~~Y~~L~~E~~G~~Q~~A~~K~~F~~I~~A~~W~~V~~K~~R~~ 30
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RESULT 3
US-08-470-220A-1
Sequence 1, Application US/08095162
Patient No. 5512459
GENERAL INFORMATION:
APPLICANT: Wagner, Fred W.
APPLICANT: Stont, Jay
APPLICANT: Henriksen, Dennis
APPLICANT: Partidge, Bruce
APPLICANT: Manning, Shane
TITLE OF INVENTION: Enzymatic Method for Modification of
TITLE OF INVENTION: Recombinant PolyPeptides
NUMBER OF SEQUENCES: 26
RESULT 3
US-08-470-220A-1
Sequence 1, Application US/08095162
Patient No. 5512459
GENERAL INFORMATION:
APPLICANT: Wagner, Fred W.
APPLICANT: Manning, Shane
TITLE OF INVENTION: Enzymatic Method for Modification of
TITLE OF INVENTION: Recombinant PolyPeptides
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: Merchant & Gould
PARRIDGE, Bruce
APPLICANT: Manning, Shane
CITY: Minneapolis
STATE: MN
COUNTRY: USA
ZIP: 55402
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MC-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/470,220A
FILING DATE: 06-JUN-1995
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/095,162
FILING DATE: 20-JUL-1993
TELEFAX: 612-332-9081
ATTORNEY/AGENT INFORMATION:
NAME: Nelson, Albin J.
REGISTRATION NUMBER: 28,659
REFERENCE/DOCKET NUMBER: 8648.32-US01
TELECOMMUNICATION INFORMATION:
TELEPHONE: 612-332-5300
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 30 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
IMMEDIATE SOURCE:
CLONE: GLP1 7-36-NH2 (Glucagon-like Peptide)
US-08-470-220A-1
Query Match 100.0%; Score 155; DB 1; Length 30;
Best Local Similarity 100.0%; Pred. No. 8.6e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 HAE~~G~~F~~T~~D~~V~~S~~S~~Y~~L~~E~~G~~Q~~A~~K~~F~~I~~A~~W~~V~~K~~R~~ 30
Db 1 HAE~~G~~F~~T~~D~~V~~S~~S~~Y~~L~~E~~G~~Q~~A~~K~~F~~I~~A~~W~~V~~K~~R~~ 30
RESULT 4
US-08-927-227-1
Sequence 1, Application US/080927227A
Patient No. 5577071
GENERAL INFORMATION:
APPLICANT: Gallaway, James A.
APPLICANT: Hoffmann, James A.
TITLE OF INVENTION: GLUCAGON-LIKE INSULINOTROPIC PEPTIDE ANALOGS,
TITLE OF INVENTION: COMPOSITIONS AND METHODS
FILE REFERENCE: X-9332B
CURRENT APPLICATION NUMBER: US/08/927,227A
CURRENT FILING DATE: 1997-09-10
NUMBER OF SEQ ID NOS: 1
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 1
LENGTH: 30
TYPE: PRT
ORGANISM: Homo sapiens
FEATURE:
OTHER INFORMATION: The arginine residue at position 30 is modified so
OTHER INFORMATION: as to replace the terminal carboxyl group with an
OTHER INFORMATION: amine.
US-08-927-227-1
Query Match 100.0%; Score 155; DB 2; Length 30;
Best Local Similarity 100.0%; Pred. No. 8.6e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAE^GTFSDVSSYLEGQA^KEFLAWLVKGR 30
 RESULT 5
 US-08-967-374-1
 ; Sequence 1, Application US/08967374
 ; Patent No. 6037143
 GENERAL INFORMATION:
 APPLICANT: Wagner, Fred W.
 APPLICANT: Stout, Jay
 APPLICANT: Henriksen, Dennis
 APPLICANT: Partridge, Bruce
 APPLICANT: Manning, Shane
 TITLE OF INVENTION: Enzymatic Method for Modification of Recombinant Polypeptides
 NUMBER OF SEQIDNOS.: 26
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Merchant & Gould
 STREET: 3100 No. 6037143west Center
 CITY: Minneapolis
 STATE: MN USA
 COUNTRY: USA
 ZIP: 55402
 COMPUTER READABLE FORM:
 MEDIUM TYPE: FLOPPY disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: Patentin Release #1.0, Version #1.30
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/08/967,374
 FILING DATE: 28-AUG-1995
 ATTORNEY/AGENT INFORMATION:
 NAME: Carter, Charles G.
 REGISTRATION NUMBER: 35,93
 CLASSIFICATION:
 PRIORITY APPLICATION DATA:
 APPLICATION NUMBER: 08/520,485
 FILING DATE: 28-AUG-1995
 ATTORNEY/AGENT INFORMATION:
 NAME: Carter, Charles G.
 REGISTRATION NUMBER: 35,93
 REFERENCE DOCKET NUMBER: 8648.32-USD1.
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 612-332-5300
 TELEFAX: 612-332-9081
 INFORMATION FOR SEQ ID NO: 1:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 30 amino acids
 TYPE: amino acid
 TOPOLOGY: linear
 MOLECULE TYPE: peptide
 IMMEDIATE SOURCE: CLONE: GLP1 7-36-NH2 (Glucagon-like Peptide)
 US-08-967-374-1
 Query Match 100.0%; Score 155; DB 3; Length 30;
 Best Local Similarity 100.0%; Pred. No. 8.6e-16;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAE^GTFSDVSSYLEGQA^KEFLAWLVKGR 30
 RESULT 6
 US-08-967-374-1
 ; Sequence 1, Application US/08967374
 ; Patent No. 6037143
 GENERAL INFORMATION:
 APPLICANT: Galloway, James A.
 APPLICANT: Hoffmann, James A.
 TITLE OF INVENTION: GLUCAGON-LIKE INSULINOTROPIC PEPTIDE ANALOGS,
 FILE REFERENCE: X-9332B
 CURRENT APPLICATION NUMBER: US/09/348,136
 CURRENT FILING DATE: 1999-07-05
 PRIOR APPLICATION NUMBER: US 08/927,227
 PRIOR FILING DATE: 1997-09-10
 NUMBER OF SEQ ID NOS: 1
 SOFTWARE: Patentin Ver. 2.0
 LENGTH: 30
 SEQ ID NO: 1
 TYPE: PRT
 ORGANISM: Homo sapiens
 FEATURE:
 OTHER INFORMATION: The arginine residue at position 30 is modified so
 Best Local Similarity 100.0%; Pred. No. 8.6e-16;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 US-09-348-136-1
 Query Match 100.0%; Score 155; DB 3; Length 30;
 Best Local Similarity 100.0%; Pred. No. 8.6e-16;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAE^GTFSDVSSYLEGQA^KEFLAWLVKGR 30
 Db 1 HAE^GTFSDVSSYLEGQA^KEFLAWLVKGR 30
 CURRENT APPLICATION NUMBER: US/09/348,136
 CURRENT FILING DATE: 1999-07-05
 PRIOR APPLICATION NUMBER: US 08/927,227
 PRIOR FILING DATE: 1997-09-10
 NUMBER OF SEQ ID NOS: 1
 SOFTWARE: Patentin Ver. 2.0
 LENGTH: 30
 SEQ ID NO: 1
 TYPE: PRT
 ORGANISM: Homo sapiens
 FEATURE:
 OTHER INFORMATION: The arginine residue at position 30 is modified so
 Best Local Similarity 100.0%; Pred. No. 8.6e-16;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 9
 US#08-915-918A-5
 Sequence 5, Application US/08915918A
 Patent No. 6277819

GENERAL INFORMATION:

APPLICANT: Efendic, Suad

TITLE OF INVENTION: USE OF GLP-1 OR ANALOGS IN TREATMENT OF MYOCARDIAL INFARCTION

NUMBER OF SEQUENCES: 5

CORRESPONDENCE ADDRESS:

ADDRESSEE: BRINKS, HOFER, GILSON & LIONE

STREET: Plaza Drive

CITY: Chicago

STATE: Illinois

COUNTRY: USA

ZIP: 60611-5599

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/915,918A

FILING DATE: 21-AUG-1997

CLASSIFICATION: 514

ATTORNEY/AGENT INFORMATION:

NAME: Martin, Alice C.

REGISTRATION NUMBER: 35,601

REFERENCE/DOCKET NUMBER: 8792/28

TELECOMMUNICATION INFORMATION:

TELEPHONE: 312-321-4200

TELEFAX: 312-321-4299

SEQUENCE CHARACTERISTICS:

LENGTH: 30 amino acids

TYPE: amino acid

STRANDBNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

HYPOTHETICAL: NO

ANTI-SENSE: NO

FRAGMENT TYPE: N-terminal

ORIGINAL SOURCE:

ORGANISM: N/A

STRAIN: N/A

INDIVIDUAL ISOLATE: N/A

HAPLOTYPE: N/A

CELL LINE: N/A

IMMEDIATE SOURCE:

LIBRARY: N/A

CLONE: N/A

SEQ ID NO 4

SEQ ID NO 5

SEQ ID NO 6

SEQ ID NO 7

SEQ ID NO 8

SEQ ID NO 9

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POSITION IN GENOME:
 CHROMOSOME/SEGMENT: N/A
 MAP POSITION: N/A
 UNITS: N/A
 US-08-472-349-3

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 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAE~~GFTS~~DVSSYLEGQAAKEFI~~AL~~VKGR 30
 Db 1 HAE~~GFTS~~DVSSYLEGQAAKEFI~~AL~~VKGR 30

RESULT 11
 US-09-333-415-4
 Sequence 4 Application US/09333415
 Patent No. 6344180
 GENERAL INFORMATION:
 APPLICANT: Holst, Jens J.
 APPLICANT: Vilsholl, Tina
 TITLE OF INVENTION: GLP-1 as a Diagnostic Test to Determine Beta-Cell Function and the Presence of the Condition of IGT and Type-II Diabetes
 FILE REFERENCE: P03987US0
 CURRENT APPLICATION NUMBER: US/09/333,415
 CURRENT FILING DATE: 1998-06-15
 NUMBER OF SEQ ID NOS: 13
 SOFTWARE: PatentIn Ver. 2.0
 SEQ ID NO 4
 LENGTH: 30
 TYPE: PRT
 ORGANISM: Homo sapiens
 US-09-333-415-4

Query Match 100.0%; Score 155; DB 3; Length 30;
 Best Local Similarity 100.0%; Pred. No. 8.6e-16;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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 Db 1 HAE~~GFTS~~DVSSYLEGQAAKEFI~~AL~~VKGR 30

RESULT 12
 US-09-585-181A-4
 Sequence 4 Application US/09585181A
 Patent No. 6358924
 GENERAL INFORMATION:
 APPLICANT: Hoffmann, James
 TITLE OF INVENTION: GIP-1 FORMULATIONS
 FILE REFERENCE: X-1168
 CURRENT APPLICATION NUMBER: US/09/585,181A
 CURRENT FILING DATE: 2001-08-22
 PRIOR APPLICATION NUMBER: US 60/067,600
 PRIOR FILING DATE: 1997-12-05
 NUMBER OF SEQ ID NOS: 5
 SOFTWARE: PatentIn version 3.1
 SEQ ID NO 4
 LENGTH: 30
 TYPE: PRT
 ORGANISM: Homo sapiens
 FEATURE:
 NAME/KEY: MOD RES
 LOCATION: (30)..(30)
 OTHER INFORMATION: The arginine residue at position 30 is modified so as to replace
 SEQ ID NO 4
 LENGTH: 30
 TYPE: PRT
 ORGANISM: Homo sapiens
 FEATURE:
 NAME/KEY: MOD RES
 LOCATION: (30)..(30)
 OTHER INFORMATION: The terminal carboxyl group with an amine.
 US-09-975-905-1

Query Match 100.0%; Score 155; DB 3; Length 30;
 Best Local Similarity 100.0%; Pred. No. 8.6e-16;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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 Db 1 HAE~~GFTS~~DVSSYLEGQAAKEFI~~AL~~VKGR 30

RESULT 13
 US-09-209-799D-10
 Sequence 10 Application US/09209799D
 Patent No. 6380357
 GENERAL INFORMATION:
 APPLICANT: Hermeling, Ronald
 APPLICANT: Hoffmann, James
 APPLICANT: Nasiminar, Chakravarthy
 TITLE OF INVENTION: GLUCAGON-LIKE PEPTIDE-1 CRYSTALS
 FILE REFERENCE: X-10242
 CURRENT APPLICATION NUMBER: US/09/209,799D
 CURRENT FILING DATE: 1998-12-11
 NUMBER OF SEQ ID NOS: 29
 SOFTWARE: PatentIn version 3.0
 SEQ ID NO 10
 LENGTH: 30
 TYPE: PRT
 ORGANISM: Artificial
 FEATURE:
 OTHER INFORMATION: synthetic construct
 US-09-209-799D-10

Query Match 100.0%; Score 155; DB 3; Length 30;
 Best Local Similarity 100.0%; Pred. No. 8.6e-16;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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 Db 1 HAE~~GFTS~~DVSSYLEGQAAKEFI~~AL~~VKGR 30

RESULT 14
 US-09-975-905-1
 Sequence 1 Application US/09975905
 Patent No. 6398053
 GENERAL INFORMATION:
 APPLICANT: Holloway, John A
 APPLICANT: Hollman, James A
 TITLE OF INVENTION: Glucagon-Like Insulinotropic Peptides, Compositions and Methods
 FILE REFERENCE: X-9332E
 CURRENT APPLICATION NUMBER: US/09/975,905
 CURRENT FILING DATE: 2001-10-12
 PRIOR APPLICATION NUMBER: 09/573,809
 PRIOR FILING DATE: 2000-05-18
 NUMBER OF SEQ ID NOS: 1
 SOFTWARE: PatentIn version 3.1
 SEQ ID NO 1
 LENGTH: 30
 TYPE: PRT
 ORGANISM: Homo sapiens
 FEATURE:
 NAME/KEY: MOD RES
 LOCATION: (30)..(30)
 OTHER INFORMATION: The arginine residue at position 30 is modified so as to replace
 US-09-975-905-1

Query Match 100.0%; Score 155; DB 3; Length 30;
 Best Local Similarity 100.0%; Pred. No. 8.6e-16;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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 Db 1 HAE~~GFTS~~DVSSYLEGQAAKEFI~~AL~~VKGR 30

RESULT 15
 US-09-505-991-1
 LENGTH: 15

Sequence 1, Application US/09505991
Agent No. 6403361

GENERAL INFORMATION:

APPLICANT: Wagner, Fred W.

Stout, Jay

Henrikson, Dennis

Partridge, Bruce

Manning, Share

Recombinant Polypeptides

TITLE OF INVENTION: Enzymatic Method for Modification of

NUMBER OF SEQUENCES: 26

CORRESPONDENCE ADDRESS:

ADDRESSEE: Merchant & Gould

STREET: 3100 NO. 6403361west Center

CITY: Minneapolis

STATE: MN

COUNTRY: USA

ZIP: 55402

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: C-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/505 991

FILING DATE: 17-Feb-2000

PRIORITY APPLICATION DATA:

CLASSIFICATION: <Unknown>

APPLICATION NUMBER: 08/520,485

FILING DATE: <Unknown>

ATTORNEY/AGENT INFORMATION:

NAME: Carter, Charles G.

REGISTRATION NUMBER: 35,093

REFERENCE/DOCKET NUMBER: 8648.32-USD1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 612-332-9300

TELEFAX: 612-332-9081

INFORMATION FOR SEQ ID NO: 1:

SEQUENCE CHARACTERISTICS:

LENGTH: 30 amino acids

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: Peptide

IMMEDIATE SOURCE:

CLONE: GLP1-7-56-NH2 (Glucagon-like Peptide)

SEQUENCE DESCRIPTION: SEQ ID NO: 1;

US/09/505 991-1

Query Match: 100.0%; Score 155; DB 4; Length 30;
Best Local Similarity 100.0%; Pred. No. 8.8e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY HAEGLFTSDVSSYLEQQAKXFIAMLVKGR 30
DB 1 HAEGLFTSDVSSYLEQQAKXFIAMLVKGR 30

Search completed: December 20, 2004, 08:59:45
Job time : 51 secs

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OM protein - protein search, using sw model

Run on: December 20, 2004, 08:54:47 ; Search time 1036 Seconds
 Perfect score: 155 HAGTFTFSDVSSYLEGQAKEFFIAWLVKGR 30
 Sequence: 10.362 Million cell updates/sec

Title: US-10-722-733_1_COPY_7_36
 Sequence: 1 HAGTFTFSDVSSYLEGQAKEFFIAWLVKGR 30

Scoring table: BLOSUM62

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 Gapext: 0.5
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Searched: 1589859 seqs, 357934939 residues

Total number of hits satisfying chosen parameters: 1589859

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match: 0%
 Maximum Match: 100%
 Listing first 45 summaries

Database :

Published Applications_AA:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query	Match Length	DB ID	Description
1	155	100.0	30	9 US-09-209-799D-10	Sequence 10, Appl
2	155	100.0	30	9 US-09-851-738-4	Sequence 4, Appl
3	155	100.0	30	9 US-09-858-880-2	Sequence 2, Appl
4	155	100.0	30	9 US-09-805-507-4	Sequence 4, Appl
5	155	100.0	30	9 US-09-859-804-4	Sequence 4, Appl
6	155	100.0	30	9 US-09-982-978-4	Sequence 4, Appl
7	155	100.0	30	9 US-09-953-021B-4	Sequence 4, Appl
8	155	100.0	30	10 US-09-854-229A-5	Sequence 5, Appl
9	155	100.0	30	10 US-09-991-792-10	Sequence 10, Appl
10	155	100.0	30	13 US-10-075-540A-4	Sequence 4, Appl
11	155	100.0	30	13 US-10-125-255-4	Sequence 1, Appl
12	155	100.0	30	14 US-10-091-258-4	Sequence 4, Appl
13	155	100.0	30	14 US-10-055-259-4	Sequence 4, Appl

RESULT 1
US-09-209-799D-10
; Sequence 10, Application US/09209799D
; Publication No. US20010014666A1

; GENERAL INFORMATION:

; APPLICANT: Hermeling, Ronald
; APPLICANT: Hoffmann, James
; APPLICANT: Narasimhan, Chakravarthy
; TITLE OF INVENTION: CRUCAGON-LIKE PEPTIDE-1 CRV
; FILE REFERENCE: X-10492
; CURRENT APPLICATION NUMBER: US/09/209 799D
; CURRENT FILING DATE: 1998-12-11
; NUMBER OF SEQ ID NOS: 29
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO: 10
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic construct
; US-09-209-799D-10

Query Match Score 155; DB
Best Local Similarity 100.0%; Score 155; DB
Matches 30; Conservative 0%; Mismatches 0

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Db 1 HAEIGFTSDVSYLQEQAQKSPFAMWYGR 30

RESULT 2
US-09-851-738-A
; Sequence 4, Application US/09851738
; Patent No. US20030055460A1

; GENERAL INFORMATION:

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Sequence 2, Appli
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Sequence 48, Appli
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Sequence 4, Appli
Sequence 25, Appli
Sequence 1, Appli
Sequence 114, Appli
Sequence 1, Appli
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Sequence 9, Appli
Sequence 25, Appli
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Sequence 2, Appli
Sequence 17, Appli
Sequence 27, Appli
Sequence 28, Appli
Sequence 3, Appli
Sequence 4, Appli
Sequence 3, Appli
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APPLICANT: Coolidge, Thomas R.
 APPLICANT: Ehlers, Mario R.W.
 TITLE OF INVENTION: Metabolic Intervention with GLP-1 to Improve the Function of
 Tissue
 FILE REFERENCE: P03660US1
 CURRENT APPLICATION NUMBER: US/09/851,738
 PRIORITY FILING DATE: 2001-05-09
 PRIORITY FILING DATE: 1999-04-30
 NUMBER OF SEQ ID NOS: 13
 SOFTWARE: PatentIn Ver. 2.0
 SEQ ID NO: 4
 LENGTH: 30
 TYPE: PRT
 ORGANISM: mammalian
 OS-09-851-738-4

Query Match 100.0%; Score 155; DB 9; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.2e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY ||||| H A E G T F P T S D V S S Y L E Q Q A K E F I A W L V K G R 30
 DB 1 H A E G T F P T S D V S S Y L E Q Q A K E F I A W L V K G R 30

RESULT 3
 OS-09-859-880-2
 Sequence 2, Application US/09859880
 Publication No. US20020061838A1
 GENERAL INFORMATION:
 APPLICANT: Holmqvist, Barton
 TITLE OF INVENTION: Peptide Pharmaceutical Formulations
 CURRENT APPLICATION NUMBER: US/09/859,880
 PRIORITY FILING DATE: 2001-05-17
 PRIORITY FILING NUMBER: US 60/2005,377
 PRIORITY FILING DATE: 2000-05-17
 PRIORITY FILING NUMBER: US 60/205,262
 PRIORITY FILING DATE: 2000-05-19
 PRIORITY FILING NUMBER: US 60/205,262
 SOFTWARE: FASTSEQ FOR Windows Version 4.0
 SEQ ID NO: 2
 LENGTH: 30
 TYPE: PRT
 ORGANISM: Artificial Sequence
 FEATURE:
 OTHER INFORMATION: A GIP-1 derivative

Query Match 100.0%; Score 155; DB 9; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.2e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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 DB 1 H A E G T F P T S D V S S Y L E Q Q A K E F I A W L V K G R 30

RESULT 4
 OS-09-805-507-4
 Sequence 4, Application US/09805507
 Patent No. US20020098195A1
 GENERAL INFORMATION:
 APPLICANT: Coolidge, Thomas R.
 ADDRESSEE: EHlers, Mario
 TIME OF INVENTION: TREATMENT OF ACUTE CORONARY SYNDROME WITH GLP-1
 FILE REFERENCE: 091987/0395
 CURRENT APPLICATION NUMBER: US/09/805,507
 CURRENT FILING DATE: 2001-03-14
 PRIORITY FILING NUMBER: 09/859,804
 PRIORITY FILING DATE: 2001-05-18

Query Match 100.0%; Score 155; DB 9; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.2e-15;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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RESULT 5
 OS-09-859-804-4
 Sequence 4, Application US/09859804
 Patent No. US2002007200A1
 GENERAL INFORMATION:
 APPLICANT: COOLIDGE, THOMAS R.
 APPLICANT: EHlers, Mario
 TITLE OF INVENTION: TREATMENT OF ACUTE CORONARY SYNDROME WITH GLP-1
 FILE REFERENCE: 091987/0395
 CURRENT APPLICATION NUMBER: US/09/859,804
 PRIORITY FILING DATE: 2001-05-18
 PRIORITY FILING NUMBER: 60/205,239
 PRIORITY FILING DATE: 2000-05-19
 PRIORITY FILING NUMBER: US 60/205,239
 SEQ ID NO: 4
 LENGTH: 30
 TYPE: PRT
 ORGANISM: Unknown Organism
 FEATURE:
 OTHER INFORMATION: Description of Unknown Organism: Mammalian GLP
 OTHER INFORMATION: Peptide
 OTHER INFORMATION: Description of Unknown Organism: Mammalian GLP
 OTHER INFORMATION: Peptide

Query Match 100.0%; Score 155; DB 9; Length 30;
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 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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 DB 1 H A E G T F P T S D V S S Y L E Q Q A K E F I A W L V K G R 30

RESULT 6
 OS-09-982-978-4
 Sequence 4, Application US/09982978
 Patent No. US20020146405A1
 GENERAL INFORMATION:
 APPLICANT: COOLIDGE, THOMAS R.
 APPLICANT: EHlers, Mario
 TITLE OF INVENTION: TREATMENT OF ACUTE CORONARY SYNDROME WITH GLP-1
 FILE REFERENCE: 091987/0395
 CURRENT APPLICATION NUMBER: US/09/982,978
 CURRENT FILING DATE: 2001-05-18
 PRIORITY FILING NUMBER: 09/859,804
 PRIORITY FILING DATE: 2001-05-18
 PRIORITY FILING NUMBER: 60/205,239
 PRIORITY FILING DATE: 2000-05-19
 PRIORITY FILING NUMBER: 09/859,804
 PRIORITY FILING DATE: 2001-03-14
 PRIORITY FILING NUMBER: 09/859,804
 PRIORITY FILING DATE: 2001-05-18
 PRIORITY FILING NUMBER: 09/859,804
 SEQ ID NO: 4
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; ORGANISM: Unknown Organism

; FEATURE: OTHER INFORMATION: Description of Unknown Organism: Mammalian GLP

; OTHER INFORMATION: peptide

US-09-982-978-4

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Best Local Similarity 100.0%; Score 155; DB 9; Length 30;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 7

US-09-953-021B-4

; Sequence 4, Application US/09953021B

; Patent No. US20020147131A1

; GENERAL INFORMATION:

; APPLICANT: Ccollide, Thomas L.

; APPLICANT: Ehlers, Mario R.W.

; TITLE OF INVENTION: Metabolic Intervention with GLP-1 to Improve the Function of Isch-

; TIE OF INVENTION: Reparilsed Skeletal Muscle Tissue

; FILE REFERENCE: P03667US6

; CURRENT APPLICATION NUMBER: US/19/953,021B

; CURRENT FILING DATE: 2001-09-11

; PRIOR APPLICATION NUMBER: 09/302,596

; NUMBER OF SEQ ID NOS: 13

; SOFTWARE: Patentin Ver. 2.0

; SEQ ID NO 4

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Homo sapiens

; US-09-953-021B-4

Query Match 100.0%; Score 155; DB 9; Length 30;

Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db 1 HAEGFTSDVSSYLEGQAKERFIAWLVKGR 30

RESULT 9

US-09-997-792-10

; Sequence 10, Application US/09997792

; Publication No. US20030045464A1

; GENERAL INFORMATION:

; APPLICANT: Hermeling, Ronald

; APPLICANT: Hoffmann, James

; APPLICANT: Narasimhan, Chakravarthy

; TITLE OF INVENTION: GLUCAGON-LIKE PEPTIDE-1 CRYSTALS

; FILE REFERENCE: X-10242

; CURRENT APPLICATION NUMBER: US/09/997,792

; CURRENT FILING DATE: 2001-11-30

; NUMBER OF SEQ ID NOS: 29

; SOFTWARE: Patentin version 3.0

; SEQ ID NO 10

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-997-792-10

Query Match 100.0%; Score 155; DB 10; Length 30;

Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGFTSDVSSYLEGQAKERFIAWLVKGR 30

Db 1 HAEGFTSDVSSYLEGQAKERFIAWLVKGR 30

RESULT 10

US-10-072-540A-4

; Sequence 4, Application US/10072540A

; Publication No. US20020123466A1

; GENERAL INFORMATION:

; APPLICANT: Hoffmann, James

; TITLE OF INVENTION: GLP-1 FORMULATIONS

; FILE REFERENCE: X-11368A

; CURRENT APPLICATION NUMBER: US/10/072,540A

; CURRENT FILING DATE: 2002-02-08

; PRIOR APPLICATION NUMBER: US 60/067,600

; PRIOR FILING DATE: 1997-12-05

; NUMBER OF SEQ ID NOS: 5

; SOFTWARE: Patentin version 3.1

; SEQ ID NO 4

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Homo Sapiens

; FEATURE:

; NAME/KEY: MOD RES

; LOCATION: (30). (30)

; OTHER INFORMATION: AMIDATION

; US-10-072-540A-4

Query Match 100.0%; Score 155; DB 13; Length 30;

Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGFTSDVSSYLEGQAKERFIAWLVKGR 30

Db 1 HAEGFTSDVSSYLEGQAKERFIAWLVKGR 30

; Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 9; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 4

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Homo sapiens

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-4

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

; US-09-834-229A-5

Query Match 100.0%; Score 155; DB 10; Length 30;

; Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQ ID NO 5

; LENGTH: 30

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: synthetic construct

Publication No. US20020165342A1
 GENERAL INFORMATION:
 APPLICANT: Gallaway, John A.
 APPLICANT: Hoffmann, James A.
 TITLE OF INVENTION: Glucagon-Like Insulinotropic Peptides, Compositions and Methods
 FILE REFERENCE: X-9332E
 CURRENT APPLICATION NUMBER: US/10/125,255
 PRIOR FILING DATE: 2002-04-17
 CURRENT APPLICATION NUMBER: 03/573,809
 SEQ ID NO 1
 LENGTH: 30
 TYPE: PRT
 ORGANISM: Homo sapiens
 FEATURE:
 NAME/KEY: MOD RES
 LOCATION: (30).-(30)
 OTHER INFORMATION: The arginine residue at position 30 is modified so as to replace
 US-10-125-255-1
 Query Match 100.0%; Score 155; DB 14; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAE~~G~~F~~T~~SDVSSYLEGQAAKEFI~~A~~WLVKGR 30
 Db 1 HAE~~G~~F~~T~~SDVSSYLEGQAAKEFI~~A~~WLVKGR 30
 RESULT 12
 US-10-091-258-4
 Publication No. US20030073626A1
 GENERAL INFORMATION:
 APPLICANT: Coolidge, Thomas R.
 TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATING PERIPHERAL VASCULAR DISEASE
 PRIORITY REFERENCE: RGN-2
 CURRENT APPLICATION NUMBER: US10/091,258
 CURRENT FILING DATE: 2002-03-05
 NUMBER OF SEQ ID NOS: 13
 SOFTWARE: PatentIn version 3.1
 SEQ ID NO 4
 LENGTH: 30
 TYPE: PRT
 ORGANISM: mammalian
 US-10-091-258-4
 Query Match 100.0%; Score 155; DB 14; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAE~~G~~F~~T~~SDVSSYLEGQAAKEFI~~A~~WLVKGR 30
 Db 1 HAE~~G~~F~~T~~SDVSSYLEGQAAKEFI~~A~~WLVKGR 30
 RESULT 13
 US-10-055-259-4
 Sequence 4, Application US/10055259
 Publication No. US20130091507A1
 GENERAL INFORMATION:
 APPLICANT: Holst, Jens J.
 APPLICANT: Vilboll, Tira
 TITLE OF INVENTION: GLP-1 AS A DIAGNOSTIC TEST TO DETERMINE Beta-CELL FUNCTION AND TH
 FILE REFERENCE: P03987US1
 CURRENT APPLICATION NUMBER: US/10/055,259
 CURRENT FILING DATE: 2002-06-21
 NUMBER OF SEQ ID NOS: 13
 Query Match 100.0%; Score 155; DB 14; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAE~~G~~F~~T~~SDVSSYLEGQAAKEFI~~A~~WLVKGR 30
 RESULT 14
 US-10-265-345A-2
 Sequence 2, Application US/10265345A
 Publication No. US20030124669A1
 GENERAL INFORMATION:
 APPLICANT: Pan, Clark
 APPLICANT: Whelan, James
 APPLICANT: Clainment, Kevin B.
 TITLE OF INVENTION: Peptides Acting as Both GIP-1 Receptor Agonists and Glucagon
 FILE REFERENCE: MRB-7288
 CURRENT APPLICATION NUMBER: US/10/265,345A
 CURRENT FILING DATE: 2003-01-31
 PRIOR FILING DATE: 2001-10-05
 NUMBER OF SEQ ID NOS: 34
 SOFTWARE: PatentIn version 3.2
 SEQ ID NO 2
 LENGTH: 30
 TYPE: PRT
 ORGANISM: Homo sapiens
 US-10-265-345A-2
 Query Match 100.0%; Score 155; DB 14; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HAE~~G~~F~~T~~SDVSSYLEGQAAKEFI~~A~~WLVKGR 30
 Db 1 HAE~~G~~F~~T~~SDVSSYLEGQAAKEFI~~A~~WLVKGR 30
 RESULT 15
 US-10-097-230-3
 Sequence 3, Application US/10097230
 Publication No. US20030186436A1
 GENERAL INFORMATION:
 APPLICANT: Peretti, Riccardo
 APPLICANT: Hui, Hongxiang
 TITLE OF INVENTION: Glucose-Dependent Insulin-Secreting Cells Transfected with a Novel
 TITLE OF INVENTION: Sequence Encoding GLP-1
 FILE REFERENCE: 81476-0249704
 CURRENT APPLICATION NUMBER: US/10/097,230
 CURRENT FILING DATE: 2002-03-12
 NUMBER OF SEQ ID NOS: 9
 SOFTWARE: PatentIn version 3.1
 SEQ ID NO 3
 LENGTH: 30
 TYPE: PRT
 ORGANISM: Homo sapiens
 US-10-097-230-3
 Query Match 100.0%; Score 155; DB 14; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.2e-15; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Mon Dec 20 14:53:53 2004

us-10-722-733-1_copy_7_36.rab

Page 5

Db 1 ||||| H A E G T F R S D V S Y L E Q A K E F I A M L V K G R 3 0

Search completed: December 20, 2004, 09:18:21.
Job time : 103.8 secs

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Copyright (c) 1993 - 2004 Compugen Ltd.	GenCore version 5.1.6				
OM protein - protein search, using sw model					
Run on:	December 20, 2004, 08:54:47 ; Search time 38 Seconds				
Title:	US-10-722-733-1_COPY_7_36				
Perfect score:	155				
Sequence:	HAEQTFPSDVSSYLEGQAAKEFIAMLWKGGR 30				
Scoring table:	BLOSUM62				
Searched:	Gapcp 10.0 , Gapext 0.5				
Total number of hits satisfying chosen parameters:	283416				
Minimum DB seq length:	0				
Maximum DB seq length:	200000000				
Post-processing:	Minimum Match 0% Maximum Match 100% Listing first 45 summaries				
Database :	PIR 79;* 1: Pir1;* 2: Pir2;* 3: Pir3;* 4: Pir4;*				
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.					
SUMMARIES					
Result No.	Score	Query	Match Length	DB ID	Description
1	155	100.0	158	1	GCPG glucagon precursor - pig (fragment)
2	155	100.0	180	1	GGBO glucagon precursor
3	155	100.0	180	1	GCHY glucagon precursor
4	155	100.0	180	1	GGGP glucagon precursor
5	155	100.0	180	1	GCHU glucagon precursor
6	155	100.0	180	1	GCRT glucagon precursor
7	155	100.0	180	1	GCRDU glucagon precursor
8	155	100.0	180	2	A57294 glucagon precursor
9	143	92.3	151	1	GCH glucagon precursor - porcine
10	129	83.2	206	2	151301 proglucagon - chick
11	126	81.3	101	1	GGFB glucagon precursor
12	126	81.3	30	2	C61125 glucagon-like pept
13	120	77.4	122	1	B61125 glucagon 2 precursors
14	115	76.1	151093	1	GGC glucagon - chinook
15	118	76.1	178	2	151058 glucagon I precursor
16	117	75.5	63	1	GGDC glucagon precursor
17	116	74.8	72	1	GGQXA glucagon precursor
18	113	72.9	60	1	GCNC glucagon precursor
19	113	72.9	178	1	GGAF glucagon II precursor
20	111	71.6	151057	2	S44473 glucagon - chinook
21	103	66.5	1	GGFIS glucagon precursor	
22	97	62.6	29	2	S07211 glucagon - marbled
23	96	61.9	31	2	S44472 glucagon G2 - Nort
24	96	61.9	124	1	GOAF glucagon 1 precursors
25	95	61.3	60	1	GGDF glucagon - smaller
26	94	60.6	31	2	S44471 glucagon G1 - Nort
27	93	60.0	1	GEN glucagon - elephant	
28	93	58.1	1	GOPV glucagon - North A	

P;126-158/Product: glucagon-like peptide 2 #status experimental <GL2>
P;107/Modified site: amidated carboxyl end (Arg) (amide in mature form from following g1
Query Match 100.0%; Score 155; DB 1; Length 158;
Best Local Similarity 100.0%; Pred. No. 6.2e-15; Mismatches 0; Indels 0; Gaps 0;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAGCTPSDVSSYLEGQAKEFIAWLYKGR 30
DB 78 HAGCTPSDVSSYLEGQAKEFIAWLYKGR 107

RESULT 2

G200:
Glucagon precursor - bovine
N/Contains: glicentin-related peptide; glucagon; glucagon-like Peptide 1; glucagon-like
C/Species: Bos primigenius taurus (cattle)
C/Accession: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 20-Mar-1998
R/Rodríguez, L.C.; Frazier, M.L.; Su, C.J.; Kumar, A.; Sanders, G.R.
A>Title: Mammalian pancreatic preproglucagon contains three glucagon-related peptides.
A/Reference number: A93970; MUID:83299996; PMID:6577439
A/Molecule type: mRNA
A/Residues: 1-180 <LOC>
A/Cross-references: EMBL:K00107
F/Browne, W.W.; Boucher, M.B.; Koffenberger Jr., J.B.
J/ Biol. Chem. 246, 2822-2827, 1971
A/Residues: Amino acid sequence: 1-180 <LOC>
A/Reference number: A92081; MUID:71166445; PMID:5102927
A/Molecule type: protein
A/Residues: 53-81 <LOC>
C/Superfamily: glucagon
G/Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancreas
F/P1-20/Domain: signal sequence #status predicted <SIG>
F/P2-150/Region: glicentin-related peptide #status predicted
F/P3-81/Product: glucagon #status experimental <GCN>
F/P4-9-127/Product: glucagon-like peptide 1 #status experimental <GL1>
F/P4-9-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F/P1-27/Modified site: amidated carboxyl end (Arg) (amide in mature form from following g1
Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 7.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HAGCTPSDVSSYLEGQAKEFIAWLYKGR 30
DB 98 HAGCTPSDVSSYLEGQAKEFIAWLYKGR 127

RESULT 3

GCHY:
Glucagon precursor - golden hamster
N/Contains: glicentin-related peptide; glucagon; glucagon-like peptide 1; glucagon-like
C/Species: Macrotis auratus (golden hamster)
C/Accession: 13-Jun-1983 #sequence_revision 13-Jun-1983 #text_change 20-Mar-1998
R/Bull, G.T.; Santorre, R.F.; Mullerbach, G.T.
N/Accession: 302, 716-718, 1983
A/Residues: Hamster preproglucagon contains the sequence of glucagon and two related peptide
A/Reference number: A01539; MUID:8167563; PMID:6535407
A/Accession: A01539
A/Molecule type: mRNA
A/Residues: 1-180 <BEL>
A/Cross-references: EMBL:J00059
C/Superfamily: glucagon
C/Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancreas
F/P1-20/Domain: signal sequence #status predicted <SIG>
F/P2-1-180/Domain: preproglucagon #status predicted <PGC>
F/P2-1-50/Region: glicentin-related peptide #status predicted
F/P3-89/Product: glucagon-37 (oxyntomodulin) #status experimental <GCN>
F/P3-81/Product: glucagon #status experimental <GCN>
F/P4-9-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F/P4-9-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F/P1-27/Modified site: amidated carboxyl end (Arg) (amide in mature form from following g1
Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 7.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAGCTPSDVSSYLEGQAKEFIAWLYKGR 30
DB 98 HAGCTPSDVSSYLEGQAKEFIAWLYKGR 127

RESULT 5

GCHU:
Glucagon precursor [validated] - human
N/Contains: glicentin; glicentin-related polypeptide (GPP); glucagon; glucagon-like
C/Species: Homo sapiens (man)
C/Date: 24-Apr-1984 #sequence revision 31-Mar-1993 #text_change 09-Jul-2004
C/Accession: A24377; A44197; A30875; A32614; A01541; S23309

F;53-81/Product: glucagon #status predicted <GCN>
F;98-127/Product: glucagon-like peptide 2 #status predicted <GL2>
F;146-180/Modified site: amidated carboxyl end (Arg) (amide in mature form from following g1
Query Match 100.0%; Score 155; DB 1; Length 180;
Best Local Similarity 100.0%; Pred. No. 7.1e-15; Mismatches 0; Indels 0; Gaps 0;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HAGCTPSDVSSYLEGQAKEFIAWLYKGR 30
DB 98 HAGCTPSDVSSYLEGQAKEFIAWLYKGR 127

R:White, J.W.; Saunders, G.P.	Nucleic Acids Res. 14, 4719-4730, 1986	D: 98 HAEQFTSDVSSYLEGQAAKEFIAWLWKG R 127
ARTICLE: Structure of the human glucagon gene.		
A:Accession: A24377		
A:Molecule type: DNA		
A:Residues: 1-180 <WHT>		RESULT 6
A:Cross-references: UNIPROT:P01275; GB:X03991		GCRT
A:Reference number: A24377; MUID:86259053; PMID:3725587		
A:Residues: 1-179 <BEL>		
A:Cross-references: GB:W01515; NID:931777; PIDN:CAA24759.1; PID:931778		
R:Drucker, D.J.; Asa, S.	J. Biol. Chem. 263, 13475-13478, 1988	
A:Title: Glucagon gene expression in vertebrate brain.		
A:Reference number: A30875; MUID:88330860; PMID:2901414		
A:Accession: A30875		
A:Molecule type: mRNA		
A:Residues: 1-180 <DRU>		
R:Orskov, C.; Bersani, M.; Johnsen, A.H.; Hojrup, P.; Holst, J.J.		
J. Biol. Chem. 264, 12826-12829, 1989		
A:Title: Complete sequences of glucagon-like peptide-1 from human and pig small intestine.		
A:Reference number: A92732; MUID:89327238; PMID:2753890		
A:Accession: A32614		
A:Molecule type: protein		
A:Residues: 98-127 <ORS>		
R:Thomsen, J.; Kristiansen, K.; Brunfeldt, K.; Sundby, F.		
FEBS Lett. 21, 311-319, 1972		
A:Title: The amino acid sequence of human glucagon.		
A:Reference number: A91373		
A:Accession: A01541		
A:Molecule type: protein		
A:Residues: 53-81 <THO>		
R:Sugita, A.; Takamoto, K.; Kamo, M.; Iwadate, H.		
Eur. J. Biochem. 691-695, 1972		
A:Title: C-terminal sequencing of protein. A novel partial acid hydrolysis and analysis		
A:Reference number: S23188; MUID:92298996; PMID:1606556		
A:Accession: S23309		
A:Molecule type: protein		
A:Residues: 53-81 <TSU>		
C:Comment: In pancreatic alpha-cells, proglucagon is processed to glicentin-related polypeptide. In intestinal L cells, proglucagon is processed to truncated glucagon-like peptide 1, glucagon-		
C:Genetics:		
C:Gene: GDB:GGC		
A:Cross-references: GDB:119265; OMIM:138030		
A:Map Position: 2q36-2q37		
A;Introns: 31/2; 83/2; 131/2; 179/2		
C:Superfamily: glucagon		
C:Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancreas		
F1-20/Domain: signal sequence #status predicted <SIG>		
F21-180/Product: proglucagon #status predicted <PGC>		
F21-81/Region: glicentin-related peptide #status predicted <GIC>		
F21-81/Product: glucagon #status predicted <GL1>		
F98-127/Product: glucagon-like peptide 1 #status predicted <GL2>		
F146-150/Product: glucagon-like peptide 2 #status predicted <GL2>		
F127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following glutamin).		
Query Match: 100.0%; Score: 155; DB 1; Length: 180; Best Local Similarity: 100.0%; Pred. No.: 7.1e-15; Mismatches: 0; Indels: 0; Gaps: 0; Matches: 30; Conservative: 0; Mismatches: 0; Indels: 0; Gaps: 0;	QY	1 HAEQFTSDVSSYLEGQAAKEFIAWLWKG 30
Db: 98 HAEQFTSDVSSYLEGQAAKEFIAWLWKG 127	QY	
RESULT 7		
GRCDU		
Glucagon precursor - degu		
Contains: glicentin-related peptide; glucagon; glucagon-like peptide 1; glucagon-like		
C:Species: Octodon degus (degus)		
C:Date: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 09-Jul-2004		
C:Accession: C36118		
R:Nishii, M.; Steiner, D.F.		
Mol Endocrinol 4:192-198, 1990		
A:Title: Cloning of complementary DNAs encoding islet amyloid polypeptide, insulin, and		
A:Reference number: A36118; MUID:9115952; PMID:2293024		
A:Accession: C36118		
A:Molecule type: mRNA		
A:Residues: 1-180 <NTS>		
A:Cross-references: UNIPROT:P22890; GB:M57688; NID:9202467; PID:AAA40588.1; PID:9202466		
C:Superfamily: glucagon		

Q:Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancreas
 E:1-20/Domain: signal sequence #status predicted <SIG>
 E:21-50/Product: proglucagon #status predicted <POC>
 E:51-50/Region: glycentin-related peptide #status predicted
 E:51-81/Product: glucagon #status predicted <GCN>
 E:82-121/Product: glucagon #status experimental <GCN>
 E:122-187/Product: glucagon-like peptide 1 #status predicted <GL1>
 E:188-227/Modified site: amidated carboxyl end (Arg) (amide in mature form from following 91)
 Query Match 100 %; Score 15; DB 1; Length 180;
 Best Local Similarity 100.0%; Pred. No. 7.1e-15; Mismatches 0; Indels 0; Gaps 0;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 C:Accession: A57294
 Q: 1 HAEGLFFSDVSSYLEGQAKEFIAWIKGR 30
 Q: 98 HAEGTFFSDVSSYLEGQAKEFIAWIKGR 127
 D:
 RESULT: 8
 A57294
 Glucagon precursor - mouse
 C:Species: Mus musculus (house mouse)
 C:Accession: A57294; S49903
 C:Title: Processing of mouse proglucagon by recombinant prehormone convertase 1 and immunoprecipitation: evidence for a second processing site
 A:Reference number: A57294; MUID:95247722; PMID:7730317
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Cross-references: UNIPROT:P5095; EMBL:Z46845; NID:9599860; PID:CAA86902.1; PID:95998
 C:Keywords: carbohydrate metabolism; duplication; hormone; pancreas
 Q:Very Match 100 %; Score 15; DB 2; Length 180;
 Best Local Similarity 100.0%; Pred. No. 7.1e-15; Mismatches 0; Indels 0; Gaps 0;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Q: 1 HAEGLFFSDVSSYLEGQAKEFIAWIKGR 30
 Q: 98 HAEGTFFSDVSSYLEGQAKEFIAWIKGR 127
 D:
 RESULT: 9
 C:Accession: A57294
 Glucagon precursor - chicken
 N:Contains: glucagon; glucagon-like peptide 1
 C:Species: Gallus gallus (chicken)
 C:Accession: 31-Dec-1991 #sequence_revision 31-Mar-1993 #text_change 09-Jul-2004
 R:Bhagawa, S.; Terzono, K.; Nata, K.; Takada, T.; Yamamoto, H.; Okamoto, H.
 F:DePietri, T.; Bhagawa, S.; Terzono, K.; Nata, K.; Takada, T.; Yamamoto, H.; Okamoto, H.
 A:Title: Nucleotide sequence determination of chicken glucagon precursor cDNA. Chicken
 A:Reference number: S03992; MUID:0249492; PMID:2338135
 A:Accession: S03992
 A:Molecule type: mRNA
 A:Residues: 1-151 <RHS>
 A:Cross-references: UNIPROT:P01277; EMBL:Y07539; NID:963749; PID:CAA68827.1; PID:g63750
 A:Accession: A52189
 A:Molecule type: protein
 A:Residues: 55-83 <POL>
 R:Huang, J.; Eng, J.; Yallow, R.S.
 R:Pollock, H.G.; Kimmel, J.R.
 J:Biol. Chem., 250, 9377-9380, 1975
 A:Title: Isolation and amino acid sequence studies of chicken glucagon. Isolation and amino acid sequence studies.
 A:Reference number: A92189; MUID:96069271; PMID:194290
 A:Accession: A52189
 A:Molecule type: protein
 A:Residues: 55-83 <POL>
 R:Huang, J.; Eng, J.; Yallow, R.S.
 A:Title: Chicken glucagon: sequence and potency in receptor assay.
 A:Reference number: A60836; MUID:88113418; PMID:2828209
 A:Accession: A60836
 A:Molecule type: protein

RESULT: 10
 A57301
 Proglucagon - chicken
 C:Species: Gallus gallus (chicken)
 C:Accession: 151301
 C:Title: Tricot and chicken proglucagon: alternative splicing generates mRNA transcripts
 A:Reference number: A55895; MUID:95295739; PMID:776976
 A:Accession: 151301
 A:Status: preliminary; translated from GB/EMBL/DDBJ
 A:Molecule type: mRNA
 A:Cross-references: UNIPROT:P01277; GB:ST8477; NID:9999386; PID:AAB34506.1; PID:95998
 C:Keywords: duplication
 Q:Very Match 92.3%; Score 143; DB 2; Length 206;
 Best Local Similarity 86.7%; Pred. No. 4.4e-13; Mismatches 3; Indels 0; Gaps 0;
 Matches 26; Conservative 3; Mismatches 3; Indels 0; Gaps 0;
 Q: 1 HAEGLFFSDVSSYLEGQAKEFIAWIKGR 30
 Q: 118 HAEGTFFSDVSSYLEGQAKEFIAWIKGR 147
 D:
 RESULT: 11
 G:RFB
 Glucagon precursor - bullfrog (fragments)
 N:Contains: cytromodulin
 C:Species: Rana catesbeiana (bullfrog)
 C:Accession: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 20-Mar-1998
 C:Accession: B2801; C2801; D2801
 R:Pollock, H.G.; Hamilton, J.W.; Rouse, J.B.; Ebner, K.E.; Rawitch, A.B.
 J: Biol. Chem., 263, 9746-9751, 1988
 A:Title: Isolation of peptide hormones from the pancreas of the bullfrog (*Rana catesbeiana*)
 A:Reference number: A92730; MUID:88257102; PMID:3260236
 A:Accession: B2801
 A:Molecule type: protein
 A:Residues: 1-36 <POC>
 A:Accession: C2801
 A:Molecule type: protein
 A:Residues: 37-58 <POC>
 A:Accession: D2801
 A:Molecule type: protein
 A:Residues: 69-101 <POC>
 C:Superfamily: glucagon
 C:Keywords: carbohydrate metabolism; duplication; hormone; pancreas
 F:1-36/Product: glucagon-36 (cytromodulin) #status predicted <GCN>
 F:37-67/Product: glucagon-like peptide 1 #status predicted <GL1>
 F:68-101/Product: glucagon-like peptide 2 #status experimental <GL2>

Query Match 83.2%; Score 129; DB 1; Length 101;
 Best Local Similarity 76.7%; Pred. No. 2.2e-11; 5; Mismatches 2; Indels 0; Gaps 0;

Matches 23; Conservative 5; Mismatches 2; Indels 0; Gaps 0;

QY 1 HAE~~GFTSDVSYLQOA~~KEFIANLVKGR 30
 Db 37 HADGIFTSDVSYLQOA~~K~~E~~F~~VDWLIKGR 66

RESULT 12

C61125 glucagon-like peptide - European eel
 C;Species: Anguilla anguilla (European eel)
 C;Date: 10-Mar-1994 #sequence_revision 10-Mar-1994 #text_change 09-Jul-2004
 C;Accession: C61125
 R;Conlon, J.M.; Andrews, P.C.; Thim, L.; Moon, T.W.
 Gen. Comp. Endocrinol. 82, 23-32, 1991
 A;Title: The primary structure of glucagon-like peptide but not insulin has been conserv
 A;Reference number: A61125; MUID:91340068; PMID:1874385
 A;Accession: C61125
 A;Molecule type: protein
 A;Residues: 1-30 <CON>
 A;Cross-references: UNIPROT:P41521
 C;Superfamily: glucagon
 C;Keywords: amidated carboxyl end; duplication
 F;1-30/Modified site: amidated carboxyl end (Arg) #status experimental
 F;30/Modified site: amidated carboxyl end (Arg) #status experimental

Query Match 81.3%; Score 126; DB 2; Length 30;
 Best Local Similarity 76.7%; Pred. No. 1.6e-11; 4; Mismatches 3; Indels 0; Gaps 0;
 Matches 23; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 HAE~~GFTSDVSYLQOA~~KEFIANLVKGR 30
 Db 1 HAE~~GFTSDVSYLQOA~~KEFIANLVKGR 30

RESULT 13

B61125 glucagon-like peptide - American eel
 C;Species: Anguilla rostrata (American eel)
 C;Date: 10-Mar-1994 #sequence_revision 10-Mar-1994 #text_change 09-Jul-2004
 C;Accession: B61125
 R;Conlon, J.M.; Andrews, P.C.; Thim, L.; Moon, T.W.
 Gen. Comp. Endocrinol. 82, 23-32, 1991
 A;Title: The primary structure of glucagon-like peptide but not insulin has been conserv
 A;Reference number: A61125; MUID:91340068; PMID:1874385
 A;Accession: B61125
 A;Molecule type: protein
 A;Residues: 1-30 <CON>
 A;Cross-references: UNIPROT:P41521
 C;Superfamily: glucagon
 C;Keywords: amidated carboxyl end; duplication
 F;1-30/Product: glucagon-like peptide #status experimental <GLU>
 F;30/Modified site: amidated carboxyl end (Arg) #status predicted

Query Match 81.3%; Score 126; DB 2; Length 30;
 Best Local Similarity 76.7%; Pred. No. 1.6e-11; 4; Mismatches 3; Indels 0; Gaps 0;
 Matches 23; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 HAE~~GFTSDVSYLQOA~~KEFIANLVKGR 30
 Db 1 HAE~~GFTSDVSYLQOA~~KEFIANLVKGR 30

RESULT 14

GCAFF2 glucagon 2 precursor - American goosefish
 N;Contains: glucagon; glucagon-like peptide 1
 C;Species: Lophius americanus (American goosefish)
 C;Date: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 09-Jul-2004
 C;Accession: A6150
 R;Lund, P.K.; Goodman, R.H.; Montminy, M.R.; Dee, P.C.; Habener, J.F.

J. Biol. Chem. 258, 3280-3284, 1983
 A;Title: Anglerfish islet pre-proglucagon II. Nucleotide and corresponding amino acid seq
 A;Reference number: A05150; MUID:83135785; PMID:6338015
 A;Accession: A05150
 A;Molecule type: mRNA
 A;Residues: 1-122 <UNP>
 A;Cross-references: UNIPROT:PO4092; GB:J00933; NID:964021; PIDN:CAA23905.1; PID:964022
 C;Superfamily: glucagon
 C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas
 F;1-21/Domain: signal sequence #status predicted <SIG>
 F;52-80/Product: glucagon #status predicted <PGC2>
 F;89-119/Product: glucagon-like peptide 1 #status predicted <GLI1>
 Query Match 77.4%; Score 120; DB 1; Length 122;
 Best Local Similarity 70.0%; Pred. No. 5.3e-10; 6; Mismatches 3; Indels 0; Gaps 0;
 Matches 21; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

QY 1 HAE~~GFTSDVSYLQOA~~KEFIANLVKGR 30
 Db 1 HAE~~GFTSDVSYLQOA~~KEFIANLVKGR 30

RESULT 15

I51093 glucagon - chinook salmon (fragment)
 C;Species: Oncorhynchus tshawytscha (chinook salmon)
 C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 09-Jul-2004
 C;Accession: I51093
 R;Irwin, D.N.; Wong, J. 267-277, 1995
 Mol. Endocrinol. 9, 267-277, 1995
 A;Title: Trout and chicken proglucagon: alternative splicing generates mRNA transcripts &
 A;Reference number: A55895; MUID:95295739; PMID:776976
 A;Accession: I51093
 A;Status: preliminary; translated from GB/EMBL/DDBJ
 A;Molecule type: mRNA
 A;Residues: 1-66 <IR>
 C;Cross-references: UNIPROT:Q91409; EMBL:U19920; NID:9736366; PIDN:AAC59670.1; PID:9736366
 C;Superfamily: glucagon
 C;Keywords: duplication

Query Match 76.1%; Score 118; DB 2; Length 66;
 Best Local Similarity 66.7%; Pred. No. 5.3e-10; 7; Mismatches 3; Indels 0; Gaps 0;
 Matches 20; Conservative 7; Mismatches 3; Indels 0; Gaps 0;

QY 1 HAE~~GFTSDVSYLQOA~~KEFIANLVKGR 30
 Db 33 HADGIFTSDVSYLQOA~~K~~E~~F~~VSNLKG~~R~~ 62

Search completed: December 20, 2004, 08:58:49
 Job time : 39 secs

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OM protein - protein search, using sw model
Run on: December 20, 2004, 08:54:47 ; Search time 189 Seconds
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Title: US-10-722-733-1_COPY_7_35
Sequence: HAEQTFTSDVSYLEGQAKEFIWLVKGR 30

Scoring table: BLOSUM62
Gappen: 10.0 , Gapext: 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-Processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

- 1: UniProt 02:*
- 2: uniprot_sprot:*
- 3: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES									
Result No.	Score	Query Match	Length	DB ID	Description	RP	RN	RESULT 1	ALIGNMENTS
1	155	100.0	45	2	O6PPF4	Q6PPF4	Q6PPF4	PRELIMINARY;	
2	155	100.0	45	2	AAT00451	O6PPR4	ID	PRT;	45 AA.
3	155	100.0	176	2	Q8M25	Q6PP4	AC		
4	155	100.0	176	1	GLUC_BOVIN	Q8M25	DT	05-JUL-2004 (TREMBLrel. 27, Created)	
5	155	100.0	180	1	GLUC_CANFA	Q8M25	DT	05-JUL-2004 (TREMBLrel. 27, Last sequence update)	
6	155	100.0	180	1	GLUC_CAVPO	Q8M25	DT	05-JUL-2004 (TREMBLrel. 27, Last annotation update)	
7	155	100.0	180	1	GLUC_HUMAN	Q8M25	DE	Glucagon (Fragment).	
8	155	100.0	180	1	GLUC_MESEU	Q8M25	DR	Capra hircus (Goat).	
9	155	100.0	180	1	GLUC_MOUSE	Q8M25	DR	Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	
10	155	100.0	180	1	GLUC_OCTDE	Q8M25	DR	Mammalia; Buteraria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;	
11	155	100.0	180	1	GLUC_PIG	Q8M25	DR	Caprinae; Capra.	
12	155	100.0	180	1	GLUC_RAT	Q8M25	DR	OX	
13	143	92.3	124	2	Q6RB1	Q6RB1	FT	Ncbi_TaxID=9925;	
14	143	92.3	124	2	AAS7556	AAS7556	FT	1	
15	143	92.3	206	1	GLUC_CHICK	Q6RB1	FT	NON_TER 1	
16	138	89.0	80	2	O6IOP8	O6IOP8	FT	45	
17	137	88.4	145	2	O6RYB5	O6RYB5	FT	45	
18	137	88.4	145	2	AAS7652	AAS7652	FT	45	
19	137	88.4	204	1	GLUC_HELSU	Q6RYB6	FT	45	
20	134	86.5	153	2	O6RYB6	O6RYB6	FT	45	
21	134	86.5	153	2	AAS7651	AAS7651	FT	45	
22	129	83.2	103	1	GLUC_RANCA	Q6RYB5	FT	45	
23	129	83.2	220	2	Q8WV9	Q8WV9	FT	45	
24	126	81.3	30	1	GLUM_ANGAN	Q6RYB5	FT	45	
25	125	80.6	149	2	Q6RYB2	Q6RYB2	FT	45	
26	125	80.6	149	2	AAS7655	AAS7655	FT	45	
27	125	80.6	266	1	GLUT_XENLA	Q6RYB2	FT	45	
28	125	80.6	266	2	Q6D124	Q6D124	FT	45	
29	121	78.1	120	2	Q6RYBT	Q6RYBT	FT	45	
30	120	78.1	120	2	AAS7650	AAS7650	FT	45	
31	120	77.4	122	1	GLU1_LPAM	Q6RYB9	FT	45	

SEQUENCE FROM N.A.
Ballester M., Castello A., Ibanez E., Sanchez A., Folch J.M.;
" A rapid and accurate real-time quantitative PCR detection system for
determining transgene copy number in transgenic animals";
Submitted (APR-2004) to the EMBL/GenBank/DDJB databases.

DR	EMBL; AY588290; RAT00451.1; -.	RT	"Mammalian pancreatic preproglucagon contains three glucagon-related peptides."	
RT	NON_TER	RT	"peptides."	
RT	45 AA;	RT	Proc. Natl. Acad. Sci. U.S.A. 80:5485-5489(1983).	
RT	5179 MW;	RT	[12]	
RT	B538A926F9447F80 CRC64;	RP	SEQUENCE OF 53-81.	
RT	100.0%; Score 155; DB 2; Length 45;	RP	Medline=7116645; PubMed=5102927;	
RT	Pred. No. 2.8e-14; Indels 0; Gaps 0;	RA	Bromer W.W.; Boucher M.E.; Koffelberger J.E. Jr.;	
RT	Mismatches 30; Conservative 0;	RA	"Amino acid sequence of bovine glucagon."	
RT	1 HAEGTPTSWSSVLEGOAKERFAWLVGR 30	RL	J. Biol. Chem. 246:2822-2827(1971).	
RT	13 HAEGTPTSWSSVLEGOAKERFAWLVGR 42	RN	[13]	
DB		RP	PUBMED=103554744;	
DR	Q8M025	PRELIMINARY;	RP	Drucker D.J.;
DR	Q8AJ25	PRT;	RA	"Glucagon-Like Peptides: regulators of cell proliferation,
DR	Q8AJ25;	PRT;	RT	"differentiation, and apoptosis."
DR	01-CCT-2002 (TREMBLEL 22; Created)	RT	Nol. Endocrinol. 17:161-171(2003).	
DR	01-OCT-2002 (TREMBLEL 22; Last sequence update)	RL	Pubmed=12626323; DOI=10.1152/ajpendo.00492.2002;	
DR	01-MAR-2004 (TREMBLEL 26; Last annotation update)	RA	Jiang G.; Zhang B.B.;	
DR	*PepProducator (Fragment).	RA	"Glucagon and regulation of glucose metabolism."	
DR	Ovis_aries (Sheep).	RL	Am. J. Physiol. 284:E671-E678(2003).	
DR	Sukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	RN	[5]	
DR	Chondrocrania; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;	RP	PUBMED=10322410;	
DR	Ovis_Cervinae; Ovis_NCL_TaxID=9940;	RA	Ducke D.J.;	
DR	[1]	RT	"Glucagon-Like Peptide 2;"	
DR	SEQUENCE FROM N.A.	RL	Trends Endocrinol. Metab. 10:153-156(1999).	
DR	RESUME_Pancreas;	RN	[6]	
DR	Limesand S.W., Hay W.W. Jr.;	RP	REVIEW.	
DR	Submitted (full-2002) to the EMBL/GenBank/DDBJ databases.	RA	Pubmed=10605628;	
DR	EUBL, AF529185; NM04409.1; -.	RA	Kieffer T.J.; Habener J.F.;	
DR	GO: GO:0005576; C:extracellular; IEA.	RT	"The Glucagon-Like Peptides;"	
DR	GO: GO:0005791; F:hormone activity; IEA.	RL	Endocrin. Rev. 20:876-913(1999).	
DR	InterPro: IPR00532; Glucagon.	RN	[7]	
DR	PRINT; PR00123; Hormone 2; 3.	RP	STRUCTURE BY NMR OF 53-81.	
DR	PRINT; PR00275; GLUCAGON.	RA	Medline=7116645; Pubmed=661957;	
DR	SMART; SM00070; GLUCA; 3.	RA	Braun W.; Wider G.; Lee K.H.; Wuthrich K.;	
DR	PROSITE; PS00260; GLUCAGON; 3.	RT	"Conformation of glucagon in a lipid-water interphase by 1H nuclear magnetic resonance;"	
DR	NON_TER	RL	J. Mol. Biol. 169:921-948(1983);	
DR	176 AA;	CC	-!- FUNCTION: Glucagon plays a key role in glucose metabolism and homeostasis. Regulates blood glucose by increasing gluconeogenesis and decreasing glycolysis. A counterregulatory hormone of insulin raises plasma glucose levels in response to insulin-induced hypoglycemia (By similarity).	
DR	SEQUENCE 176 AA;	CC	-!- FUNCTION: GLP-1 is a potent stimulator of glucose-dependent insulin release. Plays important roles on gastric motility and the suppression of plasma glucose levels. May be involved in the suppression of satiety and stimulation of glucose disposal in peripheral tissues, independent of the actions of insulin. Have growth-promoting activities, independent of intestinal epithelium. May also regulate the hypothalamic pituitary axis (HPA) via effects on LH, TSH, CRH, oxytocin, and vasopressin secretion. Increases islet cell proliferation (By similarity).	
DR	GLUC_BOVIN STANDARD; PRT;	CC	-!- FUNCTION: GLP-2 stimulates intestinal growth and up-regulates villus height in the small intestine, concomitant with increased crypt cell proliferation and decreased enterocyte apoptosis. The gastrointestinal tract, from the stomach to the colon is the principal target for GLP-2 action. Plays a key role in nutrient homeostasis, enhancing nutrient assimilation through enhanced gastrointestinal function, as well as increasing nutrient disposal. Stimulates intestinal glucose transport and decreases mucosal permeability (By similarity).	
DR	GLUC_BOVIN STANDARD; PRT;	CC	-!- FUNCTION: Glucagon may modulate gastric acid secretion and gastrroduodenal activity.	
DR	GLUC_BOVIN STANDARD; PRT;	CC	-!- SUBCELLULAR LOCATION: Secreted.	
DR	21-JUL-1986 (Rel. 01, Created)	CC	-!- TISSUE SPECIFICITY: Glucagon is secreted in the A cells of the islets of Langerhans. GLP-1, GLP-2, oxyntomodulin and glicentin are secreted from enteroendocrine cells throughout the	
DR	13-AUG-1987 (Rel. 05, last sequence update)	CC		
DR	01-OCT-2004 (Rel. 45, last annotation update)	CC		
DR	Glucagon precursor [contains: Glicentin; Glicentin-related polypeptide (GKPP); Oxyntomodulin (OXM); Glucagon; Glucagon-like peptide 1 (GLP-1); Glucagon-like peptide 1(7-36) (GLP-1(7-36)); Glucagon-like peptide 2 (GLP-2)].	CC		
DR	Name=GG;	CC		
DR	Ovis_taurus (Bovine).	CC		
DR	Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;	CC		
DR	Ovis_Bovinus; Bos;	CC		
DR	IUBMB TaxID=9913;	CC		
DR	[1]	CC		
DR	SEQUENCE FROM N.A.	CC		
DR	Medline=8F29995; PubMed=6577439;	CC		
DR	Lopez L.C., Frazier M.L., Su C.-J., Kumar A., Saunders G.F.;	CC		

"The glucagon-like peptides";
 RL Endocr. Rev. 20:876-91(1999);

CC -!- FUNCTION: Glucagon plays a key role in glucose metabolism and homeostasis. Regulates blood glucose by increasing gluconeogenesis and decreasing glycolysis. A counterregulatory hormone of insulin, raises plasma glucose levels in response to insulin-induced hypoglycemia (By similarity).

CC -!- FUNCTION: GLP-1 is a potent stimulator of glucose-dependent insulin release. Plays important roles on gastric motility and the suppression of plasma glucagon levels. May be involved in the suppression of satiety and stimulation of glucose disposal in peripheral tissues, independent of the actions of insulin. Have growth-promoting activities on intestinal epithelium. May also regulate the hypothalamic pituitary axis (HPA) via effects on LH, TSH, CRH, oxytocin, and vasopressin secretion. Increases islet cell proliferation (By similarity).

CC -!- FUNCTION: GLP-2 stimulates intestinal growth and up-regulates villus height in the small intestine, concomitant with increased crypt cell proliferation and decreased enterocyte apoptosis. The gastrointestinal tract, from the stomach to the colon is the principal target for GLP-2 action. Plays a key role in nutrient homeostasis, enhancing nutrient assimilation through enhanced gastrointestinal function, as well as increasing nutrient disposal. Stimulates intestinal glucose transport and decreases mucosal permeability (By similarity).

CC -!- FUNCTION: Oxyntomodulin significantly reduces food intake (By similarity).

CC -!- FUNCTION: Glicentin may modulate gastric acid secretion and gastrico-duodenal activity (By similarity).

CC -!- SUBCELLULAR LOCATION: Secreted.

CC -!- INDUCTION: Glucagon release is stimulated by hypoglycemia and inhibited by hyperglycemia, insulin and somatostatin. GLP-1 and GLP-2 are induced in response to nutrient ingestion (By similarity).

-!- PTM: Proglucagon is posttranslationally processed in a tissue-specific manner in pancreatic A cells and intestinal L cells. In pancreatic A cells, the major biactive hormone is glucagon, cleaved by PCSK1/PC2. In the intestinal L cells PCSK1/PC1 liberates GLP-1, GLP-2, glicentin and oxyntomodulin. GLP-1 is further N-terminally truncated by posttranslational processing in the intestinal L cells resulting in GLP-1(7-37), GLP-1(7-36)amide. The C-terminal amidation is neither important for the metabolism of GLP-1 nor for its effects on the endocrine pancreas (By similarity).

-!- SIMILARITY: Belongs to the glucagon family.

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EMBL; D00014; BAA00010.1; - .

PIR; A24856; GCP.

HSSP; P0125; IDOR.

Interpro; IPR000532; Glucagon.

Pfam; PF0122; Hormone_2_3.

PRINTS; PRO0275; GLUCAGON.

DR PROSINE; PS00260; GLUCAGON; Amidation; Cleavage on pair of basic residues; Direct protein sequencing; Glucagon family; Hormone; Signal; Signal_1.

FT PEPTIDE 21 Glucentin (By similarity).

FT PEPTIDE 21 50 Glucagon-related polypeptide (By similarity).

FT PEPTIDE 53 89 Oxyntomodulin.

FT PEPTIDE 53 81 Glucagon.

FT PEPTIDE 84 89 By similarity.

FT PROPEP 84 128 Glucagon-like peptide 1 (By similarity).

FT PEPTIDE 92 128 Glucagon-like peptide 1 (7-37) (By similarity).

FT PEPTIDE 98 127 Glucagon-like peptide 1(7-36) (By similarity).

FT PROPEP 131 145 Glucagon-like peptide 2 (By similarity).

FT PEPTIDE 145 178 Glucagon-like peptide 2 (By similarity).

FT SITE 52 53 Cleavage (by PCSK1) (By similarity).

FT SITE 83 84 Cleavage (by PCSK1 and PCSK2) (By similarity).

FT SITE 91 92 Cleavage by PCSK1 (By similarity).

FT SITE 97 98 Cleavage (by PCSK1) (By similarity).

FT SITE 130 131 Cleavage (by PCSK1) (By similarity).

FT SITE 145 146 Cleavage (by PCSK1) (By similarity).

FT MOD_RES 127 127 Arginine amide (G-28 provides amide group) (By similarity).

FT SEQUENCE 180 AA; 20972 MW; 702FB18161D2776 CRC64;

Query Match 100 %; Score 155; DB 1; Length 180;

Best Local Similarity 100 %; Pred. No. 1.1e-13;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QV 1 HAGTGPFSIVSVLEGQAKERFAMLVKG 30

Do 98 HAGTGFSDVSYLEGQAKERFAMLVKG 127

RESULT 7

ID	GLUC HUMAN	STANDARD;	PRT;	180 AA.
AC	P01275;			
DT	21-JUL-1986 (Rel. 01, Created)			
DT	29-MAR-2004 (Rel. 43, Last sequence update)			
DI	01-OCT-2004 (Rel. 45, Last annotation update)			
DE	Glucagon precursor (Contains: Glicentin; Glicentin-related polypeptide (GRPP); Oxynntomodulin (OXY); Glucagon; Glucagon-like peptide 1 (GLP-1); Glucagon-like peptide 1(7-37); Glucagon-like peptide 1(7-36); Glucagon-like Peptide 2 (GLP-2)).			
DE	Peptide 1(7-36) (GLP-1(7-36)); Glucagon-like Peptide 2 (GLP-2).			
GN	Name=GCG;			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominoidea; Homo.			
OX	NCBI_TaxID:9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=88330860; PubMed=2901414;			
RA	Drucker D.J., Asa S.; "Glucagon gene expression in vertebrate brain.", J. Biol. Chem. 263:13475-13478(1988).			
RL	[2]			
RN	SEQUENCE FROM N.A.			
RX	MEDLINE=86259053; PubMed=3725587;			
RA	White J.W., Saunders G.F.; "Structure of the human glucagon gene.", Nucleic Acids Res. 14:4719-4730(1986).			
RT	[3]			
RN	SEQUENCE FROM N.A.			
RC	TISSUE=Liver;			
RX	MEDLINE=83271477; PubMed=6877358;			
RA	Bell G.I., Sanchez-Pescador R., Laybourn P.J., Najarian R.C.; "Exon duplication and divergence in the human Preproglucagon gene.", Nature 304:368-371(1983).			
RL	[4]			
RP	SEQUENCE FROM N.A.			
RA	Kainine N., Chen X., Rolfs A., Halleck A., Hines L., Eisenstein S., Koundinya M., Raphael J., Moreira D., Kelley T., LaBaer J., Lin Y., Phelan M., Farmer A.; "Cloning of human full-length cDNA in BD Creator(TM) system donor vector.", Submitted (MAY-2003) to the EMBL/GenBank/DDBJ databases.			
RL	[5]			
RN	SEQUENCE FROM N.A.			
RC	TISSUE=ancreas;			
RX	MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242503899;			
RA	Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,			

- RA Klaunser R.D., Collins P.S., Wagner L., Shenmen C.M., Schuler G.D., Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K., Hopkins R.P., Jordan H., Moore T.I., Max S.I., Wang J.J., Hsieh F., Diatchenko L., Marusina K., Farmer A.M., Rubin G.M., Hong L., Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E., Brownstein M.J., Uedin T.B., Toshiyuki S., Carnicci C., Prange C., Raha S.S., Loqueilano N.A., Peters G.J.J., Abramson R.D., Mulahay S.J., Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunnarino P.H., Richards S., Worley K.C., Hale S., Gay L.J., Hulyk S.W., Willalon D.K., Muzzey D.M., Sodergren E.J., Lu X., Gibbs R.A., Fahey J., Helton E., Kettman M., Madan A., Rodriguez S., Sanchez A., Blakesley R.W., Touchman J.W., Green B.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Scherich A., Schein J.E., Jones S.J.M., Marra M.A., Smalius D.E., "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002). [6]
- RE SEQUENCE OF S3-81.
RE PubMed=11946536;
RE Thomesen J., Kristiansen K., Brunfeldt K., Sundby P.;
RE "The amino acid sequence of human glucagon.";
RE FEBS Lett. 21:315-319(1972).
- RN SEQUENCE OF 98-127.
RE MEDLINE=8937238; PubMed=275380;
RE Olskov C., Bersani M., Johnsen A.-H., Højrup P., Holst J.J.;
RE "Complete sequences of glucagon-like Peptide-1 from human and pig small intestine.";
RE J. Biol. Chem. 264:12826-12829(1989). [8]
- RE FUNCTION OF GLP1 BIOACTIVE FORMS.
RE Olskov C., Wettergren A., Holst J.J.;
RE "Biological effects and metabolic rates of glucagonlike peptide-1 7-36 amide and glucagonlike peptide-1 7-37 in healthy subjects are indistinguishable.";
RE Diabetes 42:658-661(1993). [9]
- RE FUNCTION OF OXYNTOMODULIN.
RE PubMed=1455743;
RE Cohen M.A., Ellis S.M., Le Roux C.W., Batterham R.L., Park A., Patterson M., Frost G.S., Ghatei M.A., Bloom S.R.;
RE "Oxyntomodulin suppresses appetite and reduces food intake in humans.";
RE J. Clin. Endocrinol. Metab. 88:4696-4701(2003). [10]
- RE FUNCTION OF GLICENTIN.
RE PubMed=1462334;
RE Tadokoro R., Shimizu T., Hosaka A., Kaneko N., Satoh Y., Yamashiro Y.;
RE "Postnatal and postprandial changes in plasma concentrations of serum glicentin in term and preterm infants.";
RE Acta Paediatr. 92:1175-1179(2003). [11]
- RE PROCESSING BY PCSK2.
RE PubMed=932B128;
RE Bouille Y., Bianchi M., Irminger J.C., Halban P.A.;
RE "Role of the prohormone convertase PC2 in the processing of proglucagon to glucagon.";
RE FEBS Lett. 413:119-123(1997). [12]
- RE PROCESSING BY PCSK1.
RE PubMed=12251102;
RE Bonic A., Mackin R.B.;
RE "Expression, purification, and PC1-mediated processing of human proglucagon, glicentin, and major proglucagon fragment.";
RE Protein Expr. Purif. 28:15-24(2003). [13]
- RE REVIEW.
RE PubMed=14719035; DOI=10.1139/y03-107;
RE Brubaker P.L., Araini Y.;
- RT "Direct and indirect mechanisms regulating secretion of glucagon-like peptide-1 and glucagon-like peptide-2.";
RT Can. J. Physiol. Pharmacol. 81:1005-1012(2003). [14]
- RT REVIEW.
RE PubMed=12554744;
RE Drucker D.J.;
RE "Glucagon-like peptides: regulators of cell proliferation, differentiation, and apoptosis.";
RE Mol. Endocrinol. 17:161-171(2003). [15]
- RE REVIEW.
RE PubMed=12626323; DOI=10.1152/ajpendo.00492.2002;
RE Jiang G., Zhang B.B.;
RE "Glucagon and regulation of glucose metabolism.";
RE Am. J. Physiol. 284:E671-E678(2003). [16]
- RE REVIEW.
RE PubMed=10322410;
RE Drucker D.J.;
RE "Glucagon-like peptide 2.";
RE Trends Endocrinol. Metab. 10:153-156(1999). [17]
- RE REVIEW.
RE PubMed=10605628;
- RA Kleffner T.J., Habener J.F.;
RE "The glucagon-like peptides.";
RE Endocr. Rev. 20:876-913(1999). [18]
- RE X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS) OF 53-81.
RE MEDLINE=98334683; PubMed=6667960;
RE Sturm N.S., Lin Y., Burley S.K., Kossenensky J.L., Ahn J.-M., Azizian B.Y., Trivedi D., Hruby V.J.;
RE "Structure-function studies on positions 17, 18, and 21 replacement analogues of glucagon: the importance of charged residues and salt bridges in glucagon biological activity.";
RE J. Med. Chem. 41:2693-2700(1998). [19]
- RE STRUCTURE BY NMR OF 98-127.
RE PubMed=1194215;
RE Chang X., Keller D., O'Donoghue S.I., Led J.J.;
RE "NMR studies of the aggregation of glucagon-like peptide-1: formation of a symmetric helical dimer.";
RE FEBS Lett. 515:165-170(2002). [20]
- RE STRUCTURE BY NMR OF GLUCAGON ANTAGONIST.
RE PubMed=12622948; DOI=10.1021/bi026629t;
RE Ying J., Ann J.-M., Jacobsen N.E., Brown M.F., Hruby V.J.;
RE "NMR solution structure of the glucagon antagonist [desNH₁, desPhe₆, Gly₉]glucagon amide in the presence of perdeuterated dodecylphosphocholine micelles.";
RE Biochemistry 42:2825-2835(2003). [21]
- CC -1- FUNCTION: Glucagon plays a key role in glucose metabolism and homeostasis. Regulates blood glucose by increasing gluconeogenesis and decreasing glycolysis. A counterregulatory hormone of insulin, raises plasma glucose levels in response to insulin-induced hypoglycemia. Plays an important role in initiating and maintaining hyperglycemic conditions in diabetes.
- CC -1- FUNCTION: Glucagon plays a key role in glucose-dependent insulin release. Play important roles on gastric motility and the suppression of plasma glucagon levels. May be involved in the suppression of satiety and stimulation of glucose disposal in peripheral tissues, independent of the actions of insulin. Have growth-promoting activities on intestinal epithelium. May also regulate the hypothalamic pituitary axis (HPA) via effects on LH, TSH, CRH, oxytocin, and vasopressin secretion. Increases islet mass through stimulation of islet neogenesis and pancreatic beta cell proliferation. Inhibits beta cell apoptosis.
- CC -1- FUNCTION: GIP-2 stimulates intestinal growth and up-regulates villus height in the small intestine, concomitant with increased crypt cell proliferation and decreased enterocyte apoptosis. The gastrointestinal tract, from the stomach to the colon is the principal target for GIP-2 action. Plays a key role in nutrient

homeostasis, enhancing nutrient assimilation through enhanced gastrointestinal function, as well as increasing nutrient disposal. Stimulates intestinal glucose transport and decreases mucosal permeability.

-!- FUNCTION: Oxyntomodulin significantly reduces food intake. Inhibits gastric emptying in humans. Suppression of gastric emptying may lead to increased gastric distension, which may contribute to satiety by causing a sensation of fullness.

Query Match 100.0%; Score 155; DB 1; Length 180; Best Local Similarity 100.0%; Pred. No. 1.e-13; Mismatches 0; Matches 30; Conservative 0; Indels 0; Gaps 0;

Qy 1 HAEGETPSDVSYLGSQAAKEFIANLVKGR 30

Db 98 HAEGETPSDVSYLGSQAAKEFIANLVKGR 127

RESULT 8

GLUC_MESAU STANDARD: PRT; 180 AA.

ID GLUC_MESAU

ID GLUC_MESAU

AC P01273; (Rel. 01, Created)

DT 21-JUL-1986 (Rel. 01, Last sequence update)

DT 01-FEB-1996 (Rel. 45, Last annotation update)

DE Glucagon precursor (Contains: Glicentin; Glicentin-related polypeptide 1 (GLP-1); Oxyntomodulin (OXY) (OXM); Glucagon; Glucagon-like peptide 1 (GLP-1); Glucagon-like peptide 1(7-37) (GLP-1(7-37)); Glucagon-like peptide 1 (GLP-1); Glucagon-like peptide 2 (GLP-2)).

DE Name=GCG; Name=GGC;

OS Mesocricetus auratus (Golden hamster).

OC Bokaryota; Metazoa; Chordata; Craniata; Euteleostomi; Mammalia; Butchoria; Rodentia; Sciurognathini; Muridae; Criceinae; Mescricetus.

OC NCBI_TaxID=10036;

OX [1]

RN SEQUENCE FROM N.A.

RX MEDLINE=81167563; PubMed=6835407; Bell G.I., Santerre R.F., Mullerbach G.T.; RT "Hamster preproglucagon contains the sequence of glucagon and two related peptides.", Nature 302:716-718(1983).

RL [2]

RN REVISONS TO 12-15.

RX Bell G.I.; Submitted (JUN-1985) to the EMBL/GenBank/DBBJ databases.

RN [3]

RX REVIEW.

RX PubMed=12554744; PubMed=DJ;

RX Drucker D.J.;

RT "Glucagon-like peptides: regulators of cell proliferation, differentiation, and apoptosis"; Mol. Endocrinol. 17:161-171(2003);

RL [4]

RN REVIEW.

RX PubMed=12626323; DOI=10.1152/jnppendo.00492.2002; RT Glucagon and regulation of glucose metabolism"; Am. J. Physiol. 284:E671-E678(2003).

RL [5]

RN REVIEW.

RX PubMed=10322410; RT Glucagon-like peptide 2"; Trends Endocrinol. Metab. 10:153-156(1999).

RL [6]

RN REVIEW.

RX PubMed=10605628; RT Glucagon-like peptide 1"; Kieffer T.J., Habener J.F.; RT Endocr. Rev. 20:976-913(1999);

RL CC -!- FUNCTION: Glucagon plays a key role in glucose metabolism and homeostasis. Regulates blood glucose by increasing gluconeogenesis and decreasing glycolysis. A counterregulatory hormone of insulin, raises plasma glucose levels in response to insulin-induced hypoglycemia (By similarity).

CC -!- FUNCTION: GLP-1 is a potent stimulator of glucose-dependent insulin release. Play important roles on gastric motility and the suppression of satiety and stimulation of glucose disposal in peripheral tissues, independent of the actions of insulin. May also growth-promoting activities on intestinal epithelium. May also regulate the hypothalamic pituitary axis (HPA) via effects on LH, TSH, CRH, oxytocin, and vasopressin secretion. Increases islet mass through stimulation of islet neogenesis and pancreatic beta-cell proliferation (By similarity).

CC -!- FUNCTION: GLP-2 stimulates intestinal growth and up-regulates villus height in the small intestine, concomitant with increased crypt cell proliferation and decreased enterocyte apoptosis. The gastrointestinal tract, from the stomach to the colon, is the principal target for GLP-2 action. Plays a key role in nutrient homeostasis, enhancing nutrient assimilation through enhanced disposal. Stimulates intestinal glucose transport and decreases mucosal permeability (By similarity); reduces food intake (By similarity).

CC -!- FUNCTION: Glicentin may modulate gastric acid secretion and gastro-duodenal activity (By similarity).

CC -!- SUBCELLULAR LOCATION: Secreted.

CC -!- INDUCTION: Glucagon release is stimulated by hypoglycemia and inhibited by hyperglycemia, insulin, and somatostatin. GLP-1 and GLP-2 are induced in response to nutrient ingestion (By similarity).

CC -!- PTM: Proglucagon is posttranslationally processed in a tissue-specific manner in pancreatic A cells and intestinal L cells. In pancreatic A cells, the major biactive hormone is glucagon cleaved by PCSK2/PC2. In the intestinal L cells PCSK1/PC1 liberates GLP-1, GLP-2, glicentin and oxyntomodulin. GLP-1 is further N-terminally truncated by posttranslational processing in the intestinal L cells resulting in GLP-1-(7-37), GLP-1-(7-36)amide. The C-terminal amidation is neither important for the metabolism of GLP-1 nor for its effects on the endocrine pancreas (By similarity).

CC -!- SIMILARITY: Belongs to the glucagon family.

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CC -----

DR EMBL; J00059; AAC37074.1; HSSP; P01275; IDR; InterPro; IPR00532; Glucagon.

DR Pfam; PF00123; Hormone 2; 3.

DR PRINTS; PRO0275; GLUCAGON.

DR PROSITE; PS00260; GLUCAGON; 4: Amidation; Cleavage on pair of basic residues; Glucagon family; KW Hormone; Signal; FT SIGNAL 1 20 Glicentin (By similarity).

FT PEPTIDE 21 89 Glicentin-related polypeptide (By similarity).

FT PEPTIDE 21 50 Oxyntomodulin (By similarity).

FT PEPTIDE 53 89 Glucagon (By similarity).

FT PEPTIDE 53 81 Glucagon (By similarity).

FT PEPTIDE 84 89 Glucagon-like peptide 1 (By similarity).

FT PEPTIDE 92 128 Glucagon-like peptide 1(7-37) (By similarity).

FT PEPTIDE 98 128 Glucagon-like peptide 2 (By similarity).

FT PEPTIDE 98 127 Glucagon-like peptide 1(7-36) (By similarity).

FT PROPER 131 145 Glucagon-like peptide 2 (By similarity).

FT PEPTIDE 146 178 Glucagon-like peptide 2 (By similarity).

- FT SITE 52 53 Cleavage (by PCSK2) (By similarity).
FT SITE 83 84 Cleavage (by PCSK1 and PCSK2) (By similarity).
- FT SITE 91 92 Cleavage (by PCSK1) (By similarity).
FT SITE 97 98 Cleavage (by PCSK1) (By similarity).
FT SITE 130 131 Cleavage (by PCSK1) (By similarity).
FT SITE 145 146 Cleavage (by PCSK1) (By similarity).
FT MOD RES 127 127 Arginine amide (G-128 provides amide group) (By similarity).
- SG SEQUENCE 180 AA; 20954 MW; 02791B49D7ADD4B CRC64; Nature 420:563-573 (2002).
- Query Match 100.0%; Score 155; DB 1; length 180;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
- QY 1 HAEGLFTSIVSSVSLQEQQAKKEFIAWLWGR 30
98 HAEGLFTSIVSSVSLQEQQAKKEFIAWLWGR 127
- RESULT 9
- GUIC MOUSE STANDARD; PRT; 180 AA.
- ID GLUC MOUSE STANDARD; PRT; 180 AA.
- ACID P5095; 01-OCT-1996 (Rel. 34, Created)
DR 001-OCT-1996 (Rel. 34, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
- DE Glucagon precursor [Contains: Glicentin; Glicentin-related polypeptide (GRPP); Oxyntomodulin (OXM); Glucagon; Glucagon-like peptide 1 (GLP-1(7-36)); Glucagon-like peptide 1 (GLP-1(7-36)); Glucagon-like peptide 2 (GLP-2)].
Name=GCG;
OC Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrates; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OC NCBI_TAXID=10909;
RN [1]
- SEQUENCE FROM N.A.
- TISSUE-Pancreatic islets;
RXNDBLINK=95247722; PubMed=7730317;
RPN Rotherberg M.E., Elertson C.D., Klein K., Zhou Y., Linberg I., McDonald J.K., Mackin R.B., Noe B.D.;
RP Processing of mouse proglucagon by recombinant prohormone convertase 1 and immunopurified prohormone convertase 2 in vitro.;
RQ Biol. Chem. 270:10136-10146 (1995).
RN [2]
- SEQUENCE FROM N.A.
- RQ Shamsdin R., Knebel W.;
RQ Submitted (2000) to the EMBL/GenBank/DBJ databases.
RN [3]
- SEQUENCE FROM N.A.
- RQ STRAIN=CCSB/BL/6J; TISSUE=Pancreas;
RQ MEDLINE=22254683; PubMed=1246851; DOI=10.1038/nature01266;
RQ Okada T., Furuno M., Kasukawa T., Adachi J., Bono H., Kondo S., Mikaido I., Osato N., Saito Y., Suzuki H., Yamamoto I., Kyosawa H., Nagai K., Tomaru Y., Hasegawa Y., Nogami A., Schonbach C., Gojobori T., Haldarelli R., Hill D.P., Bult C., Rume D.A., Quackenbush J., Schriml L.M., Kanapin A., Matsuda H., Batalov S., Beisel K.W., Blake J.A., Bradt D., Brusic V., Chothia C., Corbani L.E., Cousins S., Dalla B., Dragoi T.A., Fletcher C.F., Forrest A., Frazer K.S., Gaasterland T., Garibaldi M., Gissi C., Godzik A., Gough J., Jarvis E.D., Grimmond S., Gustincich S., Hirokawa N., Jackson I.J., Jarvis E.D., Kanai H., Kawashima K., Kedzierski Z.M., King B.L., Konagaya A., Kurochkin I.V., Lee Y., Lenhard B., Lyons P.A., Magliocca D.R., Maltais L., Marchionni L., McKenzie L., Miki H., Nagashima T., Numata K., Okido T., Pavon W.J., Peretea G., Petrowsky N., Pillai R., Pontius J.U., Qi D., Ramachandran S., Ravasi T., Reed J.C., Reed S.J., Reid J., Ring B.Z., Ringwald M., Sandelin A., Schneider C.A., Setou M., Shimada K., Sultana R., Takenaka Y., Taylor M.S., Teasdale R.D., Tomita M., Verardo R., Wagner L., Wahlestedt C., Wang Y., Watanabe Y., Wells C., Wilming L.G., Wynshaw-Boris A., Yanagisawa M., Yang J., Yang L.,
- RQ Yuan Z., Zavolan M., Zhu Y., Zimmer A., Carrinici P., Hayatsu N., Hirzane-Kishikawa T., Konno H., Nakamura M., Sakazume N., Sato K., Shiraki T., Wakai K., Kawai J., Mizawa K., Arakawa T., Fukuda S., Hara A., Hashizume W., Imai K., Ishii Y., Itoh M., Kegawa T., Miyazaki A., Sakai K., Sasai D., Shibaoka K., Shinagawa A., Yasunishi A., Yoshino M., Waterston R., Lander E.S., Rogers J., Birney E., Hayashizaki Y., "Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs"; RT Nature 420:563-573 (2002).
- RQ [4]
- RQ SEQUENCE FROM N.A.
- RQ STRAIN=FVB/N; TISSUE=colon; MEDLINE=2238257; PubMed=12477932; DOI=10.1073/pnas.242003899;
- RQ STRAUSBERG R.L., Feingold E.A., Grouse L.H., Berge J.G., Straub R.D., Collins F.S., Wagner L., Sherman C.M., Schuler G.D., Klausner R.D., Zeeberg B., Buetow K.H., Schaefer C.F., Bhattacharjee A., Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F., Diatchenko L., Maruska K., Farmer A.A., Rubin G.M., Hong L., Staderton M., Sores M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E., Brownstein M.J., Usdin T.B., Toshiyuki S., Carrinici P., Prange C., Rataj S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullally S.J., Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Guaratine P.H., Richards S., Werley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W., Villalon D.K., Muniz D.M., Sodergren E.J., Lu X., Gibbs R.A., Faley J., Heiton E., Ketteman M., Madan A., Rodrigues S., Sanchez A., Whiting M., Madan A., Young A.C., Stevchenko Y., Bouffard G.G., Brakesley R.W., Touchman J.W., Green E.D., Dickson M.C., Rodriguez A.C., Grimmwood J., Schmutz J., Myers R.M., Butterfield V.S., Krzywinski M.I., Skalska U., Smialius D.E., Schnetzer A., Schein J.E.B., Jones S.J.M., Marra M.A.; RT "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences"; RT Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002);
RN [5]
- RQ FUNCTION OF GLP-1 AND GLP-1(7-36) AMIDE.
- RQ PubMed=1886899; RT RT "GLP-1 and GLP-1(7-36) amide: influences on basal and stimulated insulin and glucagon secretion in the mouse.,"
RN Pancreas 6:208-215 (1991).
RN [6]
- RQ PROCESSING BY GLPCKL.
- RQ PubMed=9407057; RT RT "Role of the prohormone convertase PC3 in the processing of proglucagon to glucagon-like peptide 1.,"
RN J. Biol. Chem. 272:32810-32816 (1997).
RN [7]
- RQ PROCESSING BY PCSK2.
- RQ PubMed=1135850; RT RT "Severe defect in proglucagon processing in islet A-cells of prohormone convertase 2 null mice.,"
RN J. Biol. Chem. 276:27197-27202 (2001).
RN [8]
- RQ REVIEW. RT RT "Glucagon-like Peptides: regulators of cell proliferation, differentiation and apoptosis.,"
RN Mol. Endocrinol. 17:161-171 (2003).
RN [9]
- RQ DRUCKER D.J.; RT RT "Glucagon-like Peptides: regulators of cell proliferation, differentiation and apoptosis.,"
RN Mol. Endocrinol. 17:161-171 (2003).
RN [10]
- RQ REVIEW. RT RT "Glucagon and regulation of glucose metabolism.,"
RN Am. J. Physiol. 284:E671-E678 (2003).
RN [11]
- RQ REVIEW. RT RT "Glucagon and regulation of glucose metabolism.,"
RN Am. J. Physiol. 284:E671-E678 (2003).
RN [12]
- RQ REVIEW. RT RT "Glucagon and regulation of glucose metabolism.,"
RN Am. J. Physiol. 284:E671-E678 (2003).
RN [13]
- RQ REVIEW. RT RT "Glucagon and regulation of glucose metabolism.,"
RN Am. J. Physiol. 284:E671-E678 (2003).
RN [14]
- RQ REVIEW. RT RT "Glucagon and regulation of glucose metabolism.,"
RN Am. J. Physiol. 284:E671-E678 (2003).
RN [15]
- RQ REVIEW. RT RT "Glucagon and regulation of glucose metabolism.,"
RN Am. J. Physiol. 284:E671-E678 (2003).
RN [16]
- RQ REVIEW. RT RT "Glucagon and regulation of glucose metabolism.,"
RN Am. J. Physiol. 284:E671-E678 (2003).
RN [17]
- RQ REVIEW. RT RT "Glucagon and regulation of glucose metabolism.,"
RN Am. J. Physiol. 284:E671-E678 (2003).
RN [18]
- RQ REVIEW. RT RT "Glucagon and regulation of glucose metabolism.,"
RN Am. J. Physiol. 284:E671-E678 (2003).
RN [19]
- RQ REVIEW. RT RT "Glucagon and regulation of glucose metabolism.,"
RN Am. J. Physiol. 284:E671-E678 (2003).
RN [20]
- RQ REVIEW. RT RT "Glucagon and regulation of glucose metabolism.,"
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RN Am. J. Physiol. 284:E671-E678 (2003).
RN [100]

regulate the hypothalamic pituitary axis (HPA) via effects on LH, TSH, CRH, oxytocin, and vasopressin (BY similarity).

-!- FUNCTION: GIP-2 stimulates intestinal growth and up-regulates villus height in the small intestine, concomitant with increased crypt cell proliferation and decreased enterocyte apoptosis. The principal target for GIP-2 action, from the stomach to the colon is the gastrointestinal tract. From the stomach to the colon is the principal target for GIP-2 action. Plays a key role in nutrient homeostasis, enhancing nutrient assimilation through enhanced gas trointestinal function, as well as increasing nutrient disposal. Stimulates intestinal glucose transport and decreases mucosal permeability (BY similarity).

-!- FUNCTION: Glucagon may modulate gastric acid secretion and gastro-duodenal activity (BY similarity).

-!- SUBCELLULAR LOCATION: Secreted.

-!- TISSUE SPECIFICITY: Glucagon is secreted in the A cells of the islets of Langerhans. GIP-1, GIP-2, oxytormodulin and glicentin are secreted from enteroadrenergic cells throughout the gastrointestinal tract. GIP1 and GIP2 are also secreted in selected neurons in the brain.

-!- INDUCTION: Glucagon release is stimulated by hypoglycemia and inhibited by hyperglycemia, insulin, and somatostatin. GIP-1 and GIP-2 are induced in response to nutrient ingestion (By similarity).

-!- PTM: Proglucagon is posttranslationally processed in a tissue-specific manner in pancreatic A cells and intestinal L cells. In pancreatic A cells, the major bioactive hormone is glucagon. Glucagon is cleaved by PCSK2/PC2 in the intestinal L cells PCSK2/PC2 liberates GIP-2, GIP-1, and exoytormodulin. GIP-1 is further N-terminally truncated by post-translational processing in the intestinal L cells resulting in GIP-1(7-37), GIP-1(7-36)amide. The C-terminal amidation is neither important for the metabolism of GIP-1 nor for its effects on the endocrine pancreas (By similarity).

-!- SIMILARITY: Belongs to the glucagon family.

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EMBL: M5768; AAA40588.1; -.

DBPPIR; P01218; GKRNDU.

DBPPIR; P01215; IDOR.

DBPPIR; P00123; Hormone2; 3.

DBPRINTS; PRO0275; GLUCAGON.

KO: Amidation: Cleavage on pair of basic residues; Glucagon family; Hormone; Signal; Signal.

PEPTIDE: 20 89 Glicentin (BY similarity).

PEPTIDE: 21 50 Oxyntomodulin (BY similarity).

PEPTIDE: 53 89 Glucagon (BY similarity).

PEPTIDE: 84 89 Glucagon (BY similarity).

PEPTIDE: 92 128 Glucagon-like peptide 1 (BY similarity).

PEPTIDE: 98 127 Glucagon-like peptide 1(7-36) (BY similarity).

PEPTIDE: 131 145 Glucagon-like peptide 2 (BY similarity).

PEPTIDE: 146 178 Cleavage (by PCSK2) (BY similarity).

PEPTIDE: 52 53 Cleavage (by PCSK1 and PCSK2) (BY similarity).

PEPTIDE: 83 84 Cleavage (by PCSK1) (BY similarity).

PEPTIDE: 91 92 Cleavage (by PCSK1) (BY similarity).

PEPTIDE: 97 98 Cleavage (by PCSK1) (BY similarity).

PEPTIDE: 130 131 Cleavage (by PCSK1) (BY similarity).

PEPTIDE: 145 146 Cleavage (by PCSK1) (BY similarity).

FT	MOD_RES	127	127	Arginine amide (G-128 provides amide group) (BY similarity).
FT	SEQUENCE	180 AA;	21165 MW;	68831609A3051 CRC64;
QY	1 HAEGTFTSDVSYLEGQAKEPTAWLYKGR 30			
Db	98 HAEGTFTSDVSYLEGQAKEFIAWLWGR 127			
RESULT 11				
GLUC_PIG	ID_GLUC_PIG			
AC	P01274; Q86498;	STANDARD;	PRT;	180 AA.
DT	21-JUL-1986 (Rel. 01, Created)			
DT	29-MAR-2004 (Rel. 43, Last sequence update)			
DT	01-OCT-2004 (Rel. 45, Last annotation update)			
DB	Glucagon precursor [Contains: Glicentin; Glicentin-related polypeptide (GRPP); Oxytormodulin (OXY); Glucagon; Glucagon-like peptide 1 (GLP-1); Glucagon-like peptide 1(7-37) (GLP-1(7-37)); Glucagon-like peptide 1(7-36) (GLP-1(7-36)); Glucagon-like peptide 2 (GLP-2)].			
DE	Sus scrofa (Pig).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.			
OX				
GN	Name=GCG;			
OS				
RC	TISSUE=Pancreas, and Small intestine;			
RA	Sigurs R.H., Goddard B.G., Larvesten B., van Kessel A.G.; "Cloning of porcine proglucagon"; Submitted (FEB-2003) to the EMBL/GenBank/DDBJ databases.			
RL	[2]			
RP	SEQUENCE OF 21-89.			
RX	Medline:81248172; PubMed=8894800;			
RA	"The primary structure of porcine glicentin (proglucagon)."; Tim L. Moody A.J.; Regui. Pept. 2:139-150(1981).			
RN	[3]			
RP	SEQUENCE OF 21-89.			
RX	Medline:82221776; PubMed=7045833;			
RA	"The amino acid sequence of porcine glicentin."; Tim L. Moody A.J.; Peptides 2 Suppl. 2:37-39(1981).			
RN	[4]			
RP	SEQUENCE OF 53-81.			
RA	Bromer W.W., Sinn L.G., Behrens O.K.; "The amino acid sequence of glucagon. V. Location of amide groups, acid degradation studies and summary of sequential evidence.," J. Am. Chem. Soc. 79:2807-2810(1957).			
RL	[5]			
RP	SEQUENCE OF 98-127.			
RX	Medline:89327238; PubMed=2753820;			
RA	Orskov C., Bersani M., Johnsen A.H., Hoeijrup P., Holst J.J.; "Complete sequences of glucagon-like peptide-1 from human and pig small intestine"; J. Biol. Chem. 264:12826-12829(1989).			
RL	[6]			
RP	SEQUENCE OF 131-178.			
RX	Medline:8247172; PubMed=3379036;			
RA	"Naturally occurring products of proglucagon 111-160 in the porcine and human small intestine"; J. Biol. Chem. 263:8621-8624(1988).			
RN	[7]			
RP	TISSUE SPECIFICITY.			
RX	Pubmed:3530719;			
RA	Niels O.V., Roist J.J., Knuttsen S., Baldissera F.G., Poulsen S.S., "Glucagon-like peptides GIP-1 and GIP-2, predicted products of the			
RT				

glucagon gene, are secreted separately from pig small intestine but not pancreas."; RT
RT Endocrinology 119:1467-1475(1986).
RL [8]
RN REVIEW.
RX PubMed=12154744;
RA Drucker D.J.;
RT "Glucagon-like peptides: regulators of cell proliferation, differentiation, and apoptosis.";
RL Mol. Endocrinol. 17:161-171(2003).
RN [9]
REVIEW.
RX PubMed=1266323; DOI=10.1152/ajpendo.00492.2002;
RA Jiang G.; Zhang B.B.;
RT "Glucagon and regulation of glucose metabolism.";
RL Am. J. Physiol. 284:E671-E678(2003).
RN RP REVIEW.
RX PubMed=10322410;
RA Drucker D.J.;
RT "Glucagon-like peptide 2.";
RL Trends Endocrinol. Metab. 10:153-156(1999).
RN [11]
RP REVIEW.
RX PubMed=10505628;
RA Kieffer T.J.; Rabener J.F.;
RT "The Glucagon-like Peptides.";
RL Endocr. Rev. 20:876-913(1999).
RN [12]
RP X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS) CP 53-81.
RX MEDLINE=76051297; PubMed=171582;
RA Sasaki K.; Dickerill S.; Adamak D.A.; Tickle I.J.; Blundell T.L.;
RT "X-ray analysis of glucagon and its relationships to receptor"
RL Nature 257:751-757(1975).
CC -!- FUNCTION: Glucagon plays a key role in glucose metabolism and homeostasis. Regulates blood glucose by increasing gluconeogenesis and decreasing glycolysis. A counterregulatory hormone of insulin, raises plasma glucose levels in response to insulin-induced hypoglycemia (By similarity).
CC -!- FUNCTION: GLP-1 is a potent stimulator of glucose-dependent insulin release. Play important roles on gastric motility and the suppression of plasma glucagon levels. May be involved in the suppression of satiety and stimulation of glucose disposal in peripheral tissues, independent of the actions of insulin. Have growth-promoting activities on intestinal epithelium. May also regulate the hypothalamic pituitary axis (HPA) via effects on LH, TSH, CRH, oxytocin, and vasopressin (By similarity).
CC -!- FUNCTION: GIP-2 stimulates intestinal growth and up-regulates villus height in the small intestine, concurrent with increased crypt cell proliferation and decreased enteroocyte apoptosis. The principal target for GIP-2 action. Plays a key role in nutrient homeostasis, enhancing nutrient assimilation through enhanced disposal. Stimulates intestinal glucose transport and decreases mucosal permeability (By similarity). Reduces food intake (By similarity).
CC -!- FUNCTION: Glicentin may modulate gastric acid secretion and gastrico-duodenal activity.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- TISSUE SPECIFICITY: Glucagon is secreted in the A cells of the islets of Langerhans. GIP-1, GIP-2, oxyntomodulin and glicentin are secreted from enterendoocrine cells throughout the gastrointestinal tract. GIP1 and GIP2 are also secreted in selected neurons in the brain.
CC -!- INDUCTION: Glucagon release is stimulated by hypoglycemia and inhibited by hyperglycemia, insulin, and somatostatin. GIP-1 and GIP-2 are induced in response to nutrient ingestion (By similarity).
CC -!- PTM: Proglucagon is posttranslationally processed in a tissue-specific manner in pancreatic A cells and intestinal L cells. In

pancreatic A cells, the major biactive hormone is glucagon cleaved by PCSK2/PC2. In the intestinal L cells PCSK1/PC1 liberates GIP-1, GIP-2, Glicentin and oxyntomodulin. GIP-1 is further N-terminally truncated by posttranslational processing in the intestinal L cells resulting in GIP-1(7-37) GIP-1-(7-36)amide. The C-terminal amidation is neither important for the metabolism of GIP-1 nor for its effects on the endocrine pancreas (By similarity).
CC -!- MISCELLANEOUS: GIP-2 does not have cleavage on a pair of basic residues at C-terminus as in other mammals.
CC -!- SIMILARITY: Belongs to the glucagon family.

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CC DR EMBL; A1242124; AA088211.1; -.
CC DR PDB; 1SCN; X-ray;
CC DR InterPro; IPR000532; Glucagon.
CC DR Pfam; PF0123; hormone_3.
CC DR PRINTS; PR00275; GLUCAGON.
CC DR SMART; SM00070; GLUCA; 3.
CC DR PROSITE; PS0260; GLUCAGON; 4.
CC 3D-structure; Annotation; Cleavage on pair of basic residues;
CC Direct protein sequencing; Glucagon family; Hormone; Signal;
CC FT SIGNAL 1 20
CC FT PEPTIDE 21 89
CC FT PEPTIDE 21 50
CC FT PEPTIDE 53 89
CC FT PEPTIDE 53 81
CC FT PROPEP 84 89
CC FT PEPTIDE 92 128
CC FT PEPTIDE 98 128
CC FT PEPTIDE 98 127
CC FT PROPER 131 145
CC FT PEPTIDE 146 180
CC FT SITE 52 53
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CC FT SITE 130 131
CC FT SITE 145 146
CC FT MOD_RES 127 127
CC FT CONFLICT 143 143
CC SQ SEQUENCE 180 AA; 21029 MW; 322997AB72177EE6 CRC64;
CC Query Match 100.0%; Score 155; DB 1; Length 180;
CC Best Local Similarity 100.0%; Pred. No. 1.1e-13;
CC Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
CC OY 1 HAGTFPSDVSSYLEGQAKEFIAWVKG 30
CC Db 98 HAGTFPSDVSSYLEGQAKEFIAWVKG 127

RESULT 12
GLUC_RAT ID GLUC_RAT STANDARD; PRT; 180 AA.
AC P00833;
DT 01-JAN-1988 (Rel. 06, Created)
DT 01-JAN-1988 (Rel. 06, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Glucagon Precursor [Contains: Glicentin; Glicentin-related polypeptide 1 (GPP); Oxyntomodulin (OXM); Glucagon; Glucagon-like peptide 1 (GLP-1); Glucagon-like peptide 1(7-37) (GIP1(7-37)); Glucagon-like peptide 1(7-36) (GLP-1(7-36)); Glucagon-like peptide 2 (GLP-2)].

- GN Name=Gg;
 OS Rattus norvegicus (Rat).
 OC Eukarya; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OX Nobi_Taxid=0116;
 RN [1];
 RP SEQUENCE FROM N.A.
 RX MEDLINE=85034853; PubMed=6094539;
 RA Heinrich G., Gross P., Habener J.F.;
 "Glucagon gene sequence. Four of six exons encode separate functional
 domains of rat pre-glucagon.";
 J. Biol. Chem. 259:14082-14087(1984).
 RN [2];
 RP SEQUENCE FROM N.A.
 RX Heinrich G., Gross P., Lund P.K., Bentley R.C., Habener J.F.;
 "Pre-proglucagon messenger ribonucleic acid: nucleotide and encoded
 amino acid sequences of the rat pancreatic complementary
 deoxyribonucleic acid";
 Endocrinology 115:2176-2181(1984).
 RN [3];
 RP SEQUENCE FROM N.A.
 RX MEDLINE=8503424; PubMed=3528148;
 RA Mojsov S., Heinrich G., Wilson T.B., Ravazzola M., Orci L.,
 Habener J.F.;
 "Preproglucagon gene expression in pancreas and intestine diversifies
 at the level of post-translational processing.;"
 J. Biol. Chem. 261:11880-11889(1986).
 RN [4];
 RP SEQUENCE OF 53-89.
 RX PubMed=793770;
 RA Collier N.L., Walsh J.H., Wong H.C., Shively J.B., Davis M.T.,
 Lee T.D., Reeve J.R. Jr.;
 Chateil M.A., Bloom S.R.;
 "Purification and sequence of rat oxyntomodulin.";
 Proc. Natl. Acad. Sci. U.S.A. 91:362-366(1994).
 RN [5];
 RP FUNCTION OF OXYNTOMODULIN.
 RX PubMed=11554680;
 RA Bakin C.L., Gunn I., Small C.J., Edwards C.M., Hay D.L., Smith D.M.,
 Chateil M.A., Bloom S.R.;
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 peptide-1 and glucagon-like peptide-2;"
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 differentiation, and apoptosis.";
 Vol. Endocrinol. 17:161-171(2003).
 RN [10];
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 RX PubMed=12526323; DOI=10.1152/ajpendo.00492.2002;
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 RT "Glucagon and regulation of glucose metabolism.";
 RL Am. J. Physiol. 284:E671-E678(2003).
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 RX PubMed=10322410;
 RA Drucker D.J.;
 RT "Glucagon-like peptide 2.";
 RL Trends Endocrinol. Metab. 10:153-156(1999).
 RN [12];
 RP REVIEW.
 RX PubMed=10605628;
 RA Kieffer T.J., Habener J.F.;
 RT "The glucagon-like peptides.";
 RL Endocr. Rev. 20:876-913(1999).
 CC -!- FUNCTION: Glucagon plays a key role in glucose metabolism and
 homeostasis. Regulates blood glucose by increasing gluconeogenesis
 and decreasing glycolysis. A counterregulatory hormone of insulin,
 raises plasma glucose levels in response to insulin-induced
 hypoglycemia. Plays an important role in initiating and
 maintaining hyperglycemic conditions in diabetes.
 CC -!- FUNCTION: GLP-1 is a potent stimulator of glucose-dependent
 insulin release. Plays important roles on gastric motility and the
 suppression of plasma glucagon levels. May be involved in the
 suppression of satiety and stimulation of glucose disposal in
 peripheral tissues, independent of the actions of insulin. Have
 growth-promoting activities on intestinal epithelium. May also
 regulate the hypothalamic pituitary axis (HPA) via effects on LH,
 TSH, CRH, oxytocin, and vasopressin secretion. Increases islet
 mass through stimulation of islet neogenesis and pancreatic beta
 cell proliferation. Inhibits beta cell apoptosis.
 CC -!- FUNCTION: GIP-2 stimulates intestinal growth and up-regulates
 villus height in the small intestine, concomitant with increased
 crypt cell proliferation and decreased enterocyte apoptosis. The
 principal target for GIP-2 action. Plays a key role in nutrient
 homeostasis, enhancing nutrient assimilation through enhanced
 disposal. Stimulates intestinal glucose transport and decreases
 mucosal permeability.
 CC -!- FUNCTION: Oxyntomodulin significantly reduces food intake.
 CC -!- FUNCTION: Glicentin may modulate gastric acid secretion and the
 gastro-pancreo-duodenal activity.
 CC -!- SUBMUCULAR LOCATION: Secreted.
 CC -!- TISSUE SPECIFICITY: Glucagon is secreted in the A cells of the
 islets of Langerhans. GLP-1, GIP-2, oxyntomodulin and glicentin
 are secreted from enteroendocrine cells throughout the
 gastrointestinal tract.
 CC -!- INDUCTION: Glucagon release is stimulated by hypoglycemia and
 inhibited by hyperglycemia, insulin, and somatostatin. GLP-1 and
 GIP-2 are induced in response to nutrient ingestion.
 CC -!- PRM: Proglucagon is posttranslationally processed in a tissue-
 specific manner in pancreatic A cells and intestinal L cells. In
 pancreatic A cells, the major bioactive hormone is glucagon
 cleaved by PCSK2/PC2. In the intestinal L cells PCSK1/PC1
 liberates GIP-1, GIP-2, glicentin and oxyntomodulin. GIP-1 is
 further N-terminally truncated by posttranslational processing in
 the intestinal L cells resulting in GIP-1-(7-37), GIP-1-(7-38) amide.
 CC The C-terminal amidation is neither important for the metabolism
 of GLP-1 nor for its effects on the endocrine pancreas.
 CC -!- SIMILARITY: Belongs to the glucagon family.
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 or send an email to license@ebi.ac.uk).
 CC EMBL: K02813; AAA41235.1; JOINED.
 DR EMBL: K02810; AAA41235.1; JOINED.

Best local Similarity		86.7%	Pred. No.	3.7e-12;	Indels	0;	Gaps
Matches		26;	Conservative	3;	Mismatches	1;	
QY	1 HAGSTFTSDVSSYLEGQAKEFIANLVKGR 30						
Db	36 HADGTYISDSSYLEGQAKEFIANLVNGR 65						
RESULT 14	AAS57655	PRELIMINARY;	PRT;	124 AA.			
ID	AAS57655						
AC	AAS57655;						
DT	25-MAR-2004 (TREMBL).	27, Created)					
RT	"Molecular evolution of proglucagon in non-mammalian vertebrates."						
DR	Submitted (NOV-2003) to the EMBL/GenBank/DBJ databases.						
FT	NON_TER 1						
SEQUENCE	124 AA; 14151 MW; 80513A2D6DB5FC91 CRC64;						
QY	1 HAGSTFTSDVSSYLEGQAKEFIANLVKGR 30						
Db	36 HADGTYISDSSYLEGQAKEFIANLVNGR 65						
RESULT 15	GLUC_CHICK	STANDARD;	PRT;	205 AA.			
ID	GLUC_CHICK						
AC	PO1277; Q91410;						
DT	21-JUL-1984 (Rel. 01, Created)						
DT	28-FEB-2003 (Rel. 41, Last sequence update)						
DT	05-JUL-2004 (Rel. 44, Last annotation update)						
DB	Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP); Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP); Glucagon-like peptide 1 (GLP-1); Glucagon-like peptide 1(7-36) (GLP-1(7-36)); Glucagon-like peptide 2 (GLP-2)].						
DE	Meleagris gallopavo (Chicken), and						
OS	Buteayota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae; Gallus gallus						
OC							
OC							
OC							
OX	NCBI_TAXID=9031, 9103;						
RN	SEQUENCE FROM N.A. (ISOFORM PANCREATIC).						
RC	SPECIES=Chicken; TISSUE=Pancreas;						
RX	Medline=90249442; Pubmed=2383135;						
RA	Hasagawa S., Terazono K., Nata K., Takada T., Yamamoto H., Okamoto H.;						
RL	Submitted (NOV-2003) to the EMBL/GenBank/DBJ databases.						
EMBL	AY488920; AAC57655_1; -.						
DR	InterPro: IPR005532; Glucagon.						
DR	PRINTS: PR00275; GLUCAGON.						
DR	SMART: SM0070; GLUCA_2.						
DR	PROSITE: PS00260; GLUCAGON;						
PT	NON_TER 1						
SEQUENCE	124 AA; 14151 MW; 80513A2D6DB5EC91 CRC64;						

RN [3] SEQUENCE OF 55-83.
 RP SPROTES-Chicken;
 RC MEDLINE:76009271; PubMed:1194290;
 RX Pollock H.G., Kimmel J.R.; "Chicken glucagon: Isolation and amino acid sequence studies.", J. Biol. Chem. 230:9377-9388(1975).
 RN [4] SEQUENCE OF 55-83.
 RP SPROTES-Chicken;
 RX PubMed:2828209;
 RT "Chicken glucagon: sequence and potency in receptor assay.";
 RX Horm. Metab. Res. 19:542-544(1987).
 RN [5] SEQUENCE OF 55-83.
 RP COMPOSITION, AND SEQUENCE OF 55-83.
 RC SPROTES-W-gilopavo;
 RX MEDLINE:7304118; PubMed:464532;
 RX Markussen J., Frandsen E.K., Heding L.G., Sturdy F.; "Turkey glucagon: crystallization, amino acid composition and immunology"; Res. 4:360-363(1972).
 RX Horm. Metab. Res. 4:360-363(1972).
 C -!- FUNCTION: Glucagon plays a key role in glucose metabolism and homeostasis. Regulates blood glucose by increasing gluconeogenesis and decreasing glycolysis.
 C -!- FUNCTION: GLP-1 is a potent stimulator of glucose-dependent insulin release.
 C -!- FUNCTION: GLP-2 stimulates intestinal growth and up-regulates villus height in the small intestine, concomitant with increased crypt cell proliferation and decreased enterocyte apoptosis.
 C -!- SUBCELLULAR LOCATION: Secreted.
 C -!- ALTERNATIVE PRODUCTS:
 Event=Alternative splicing; Named isoforms=2;
 Name=Intestinal;
 Name=Pancreatic;
 IsoId=P01277-1; Sequence=Displayed;
 Note=Has been shown to exist only in chicken so far;
 C -!- INDUCTION: Produced in the A cells of the islets of Langerhans in response to a drop in blood sugar concentration.
 C -!- PTM: Proglucagon is posttranslationally processed in a tissue-specific manner in pancreatic A cells and intestinal L cells. In pancreatic A cells, the major bioactive hormone is glucagon cleaved by PCSK2/PC2. In the intestinal L cells PCSK1/PC1 liberates GIP-1 and GIP-2. GIP-1 is further N-terminally truncated by posttranslational processing in the intestinal L cells resulting in GLP-1(7-37) GLP-1(7-36)amide (by similarity).
 C -!- MISCELLANEOUS: The composition of turkey glucagon appears to be identical with chicken.
 C -!- SIMILARITY: Belongs to the glucagon family.
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Search completed: December 20, 2004, 08:58:05
 Job time : 191 secs
 Query Match 92.3%; Score 143; DB 1; Length 206;
 Best Local Similarity 86.7%; Pred. No. 6.1e-12; 1; Mismatches 0; Gaps 0;
 Matches 26; Conservative 3; Indels 0; Gaps 0;
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 Db 118 HAEGTYSDITSYLEGAAKRFIAMWGR 147
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 SQ SEQUENCE 206 AA: 23875 MW: AB299E1B02FC6AA4 CRC64;

	Query	Match	Score	DB	Length	Pred.	Mismatches	Indels	Gaps	Conservative
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